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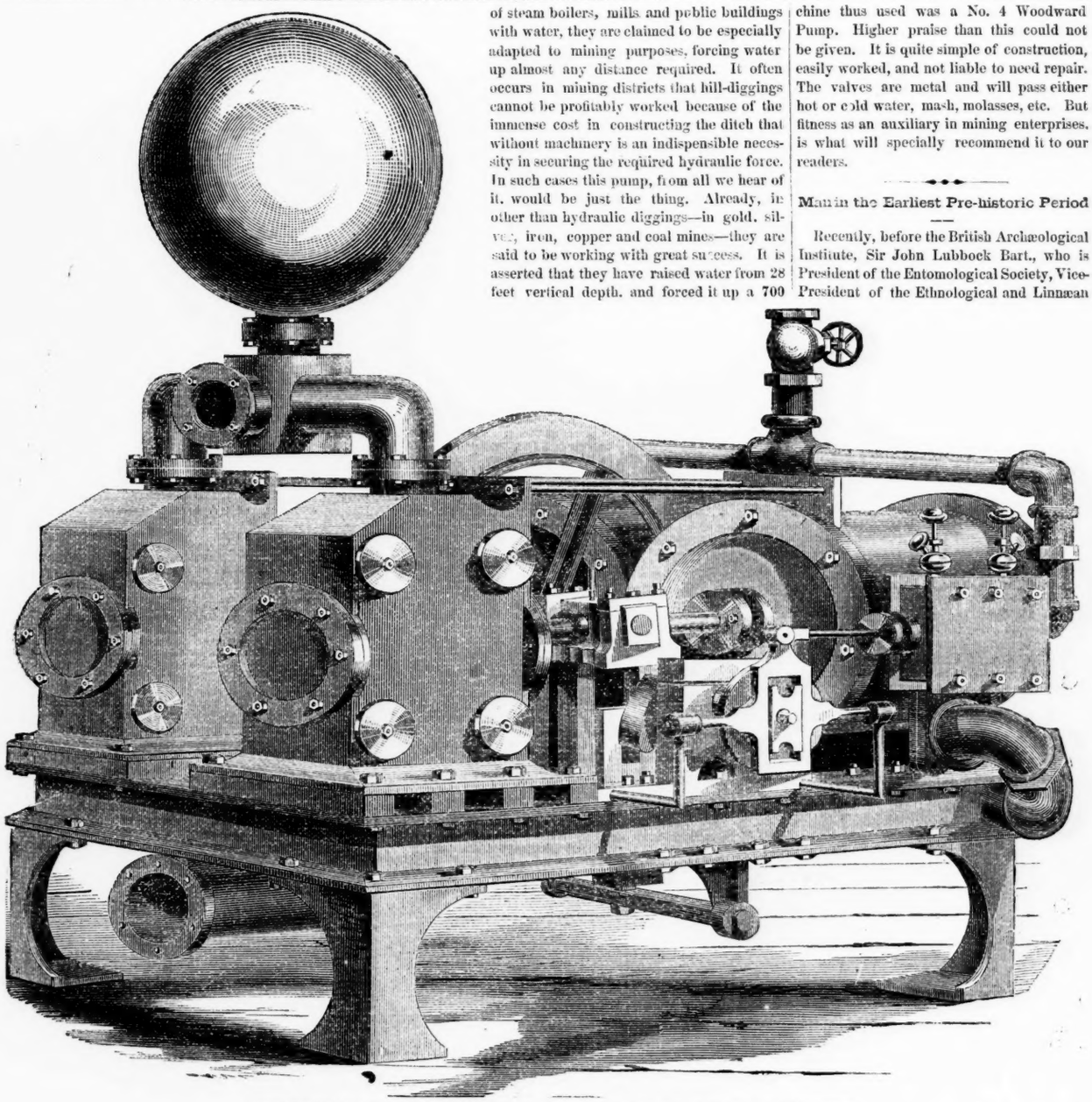

WOODWARD'S PATENT DUPLEX STEAM PUMP AND FIRE ENGINE.

STEAM PUMPS.

Herewith we present to the readers of the JOURNAL OF MINING, an accurate engraving of the Patent Duplex Steam Pump and Fire Engine, made by the Woodward Steam Pump Manufacturing Company, Nos. 76, 78 and 80 Centre street, corner of Worth, in this city. Besides being extensively used for the supply of steam boilers, mills and public buildings with water, they are claimed to be especially adapted to mining purposes, forcing water up almost any distance required. It often occurs in mining districts that hill-diggings cannot be profitably worked because of the immense cost in constructing the ditch that without machinery is an indispensible necessity in securing the required hydraulic force. In such cases this pump, from all we hear of it, would be just the thing. Already, in other than hydraulic diggings—in gold, silver, iron, copper and coal mines—they are said to be working with great success. It is asserted that they have raised water from 28 feet vertical depth, and forced it up a 700 feet slope whose vertical height was 500 feet—and this with but 23lbs. steam. It is calculated that, according to size, they will discharge up to 2500 gallons per minute. Everybody in New York doubtless remembers when Barnum's Museum was burned how the *Herald* "Fire Brigade" worked their pump in the *Herald* building with such good success as to save the remainder of the block from destruction. The machine thus used was a No. 4 Woodward Pump. Higher praise than this could not be given. It is quite simple of construction, easily worked, and not liable to need repair. The valves are metal and will pass either hot or cold water, mash, molasses, etc. But fitness as an auxiliary in mining enterprises, is what will specially recommend it to our readers.

Man in the Earliest Pre-historic Period

Recently, before the British Archæological Institute, Sir John Lubbock Bart., who is President of the Entomological Society, Vice-President of the Ethnological and Linnæan Societies, and a Fellow of the Royal, the Geological and the Society of Antiquaries—gave an inaugural address on "the study of Primeval Archæology in Western Europe." He recognized four distinct pre-historic periods, namely, Palæolithic or Early Stone Age; the Neolithic or Later Stone; the Bronze Age, and the Age of Iron. Of the earliest of these periods he said that its antiquities are found in beds of gravel or

loam, which extend along our valleys, and reach sometimes 200 feet above the present water level. These beds were deposited by the existing rivers, which, moreover, drained the same areas as at present. The fauna of that period comprised other than animals now existing—for instance, the mammoth, the woolly-haired rhinoceros, the hippopotamus major, and the musk ox, then lived. The climate was much colder than at present, yet man, he said, already inhabited Western Europe, and used rough implements of stone, none of which were polished. Pottery and the use of metals were unknown. The people could draw, and the representation of a mammoth on a plate of fossil ivory, found by M. Lartet at La Madelaine, was exhibited as a specimen.

Save Your "Tailings."

The Nevada *Enterprise*, of recent date, says: On our way up Gold Canyon, we could not but notice the continued line of sluice-boxes which are used in the collection and saving of the rich sulphurets carried off in the "tailings" from the mills, which would otherwise all pass off down the Canyon and be lost, were it not for this system of sluices, which have been adopted only within the last year or two. They extend in regular series, for miles along the canyon, one series closely adjoining the other, four strings of these sluice-boxes, three or four inches deep by about a foot in width, and perhaps a hundred feet or so in length, are placed closely side by side, the necessary fall or descent being given them. Two strings of these boxes are used for present purposes, while the other two are being "cleaned up," which operation consists in taking out the gunny cloths or blankets which line the bottoms, and washing them free from the sulphurets into a large tank made for the purpose. The sulphurets being the heaviest, settle in the fibres of these cloths, while the lighter matters are carried off by the muddy waters flowing through. These sulphurets or concentrated tailings are, of course, very valuable, being worth $20 or $30 and more per ton, and the saving of them gives profitable employment to a large number of men. They are reworked in the mills. Cobden, that terse old English writer, said, in one of his essays, that "that man was a benefactor of his race who made two blades of grass grow where one was formerly produced." In the same manner do those men engaged in tailing claims, by increasing the wealth of the country, become its benefactors. Success to all such efforts.

Explosive Substances.

The changes which have been made in the composition of gunpowder since its first invention, amount solely to small variations in the proportions of its constituent parts. There have, however, been improvements made in the preparation and incorporation of these constituents, and their conversion into grains or masses of different size and density so as to fulfil the various requirements of military and industrial art. The endeavors which have been made to increase the utility or to diminish the cost of gunpowder, have been in the direction of finding a substitute for saltpetre, such as nitrates of sodium, lead and barium. These have resulted only in preparing materials suitable for blasting, such as soda gunpowder and barytic powder, or *poudre saxafragine*. Chlorate of potash, which differs from saltpetre only in containing chlorine instead of nitrogen, is far more energetic than any of the nitrates, but acts too destructively to the fire-arm, on account of the rapidity of its explosion, to admit of its safe employment. Many years ago a mixture of chlorate of potash, ferrocyanide of potassium and sugar, called german or white gunpowder, was tried; but a more promising discovery was that of mixtures of chlorate of potash, with substances of permanent character, such as taunic and gallic acids and some kinds of resins. These are much less violently detonating than the usual substances containing chlorate of potash, and if well prepared are decidedly more powerful as explosives than gunpowder, and probably are more applicable for blasting. A comparatively safe application of chlorate of potash to this use was made about six years ago by M. Hochstadter, a German manufacturer, who used unsized blotting paper thoroughly soaked in and coated with a thin paste consisting of chlorate of potash, finely divided charcoal, a small quantity of sulphide of antimony and a little starch or other binding substance, water being used as the solvent and mixing ingredient; the paper was rolled up compactly and dried. This has in some cases been found more powerful than gunpowder when used in small arms. Another explosive, which also combines with cheapness and power comparative safety, is spent tar in small fragments, saturated with chlorate of potash, and afterwards dusted over with sulphur. This deflagrates very slowly when unenclosed, but in blast holes does good service. The most remarkable material, however, is nitro glycerine, discovered by Solvero in 1847, and applied as an explosive agent by Mr. Alfred Nobel, a Swedish engineer in 1864. Its cost is about seven times that of blasting gunpowder, but its power about ten times greater; but the chief economy in its use is more especially in hard rocks, as much fewer and smaller holes are required than when gunpowder is employed.

Mining Summary.

Michigan.

From the Portage Lake (Houghton) *Gazette*, August 2nd, we learn that: The products of the Portage Lake mines for the first half of this year exceed those of a corresponding period last year by 445 tons 1,154 lbs., thus:

	Total 1866.		Total 1865.	
Mines.	Tons.	Lbs.	Tons.	Lbs.
Quincy	623	1,835	576	658
Franklin	496	129	389	566
Pewabic	440	1,614	406	1,195
Huron	265	424	279	997
Isle Royale	182	1,288	214	594
Hancock	170	265	9	—
Grand Portage	161	1,424	144	1,158
Albany and Boston	101	939	37	1,426
Shelden-Columbian	55	303	22	731
Calumet	38	55	—	—
Total	2,535	279	2,089	1,125

The July product of the Albany and Boston mine was 16 tons 356 lbs., and of the Hancock mine 52 tons 720 lbs. . . . . The Old Cliff mine has declared a semi-annual dividend of $3 per share. What other mine is going to follow suit? If none, then they can but acknowledge that the Cliff has been more economically managed and energetically worked than any other mine in the country, notwithstanding the continual reports that "the Cliff is looking poor." This last $60,000 makes the total amount paid in by stockholders. . . . . The Concord openings are showing splendidly. . . . . In addition to the erection of a blast furnace for smelting the Calumet conglomerate, the Smelting Works Company are about to extend their dock front forty feet out into the lake, and increase the length three hundred and forty feet. . . . . The frame-work of the Isle Royale new stamp-mill is up and nearly closed in. The foundations of the Shelden-Columbian mill are all finished, and the greater portion of the frame work is set up. A considerable portion of the latter's machinery has arrived and is now lying on the dock. . . . The openings of the St. Clair mine, on the first level, are about six hundred and fifty feet in length, showing a vein of good width, well defined, and heavily charged with mass, barrel and stamp copper. About eight tons of mass and barrel work can now be seen on the surface, undergoing a preparatory dressing for shipping and smelting. This is the result of July's operations only. . . . . The opening of the fifteenth and deepest level in the Pewabic mine, has been commenced from the bottom of two winzes—one north, and one south—about eighty feet from No. 5 shaft. The drifts are now in ten feet each way, and are in a very productive lode, especially at the north, which was one of the richest winzes ever known in the mine. There are four splendid stopes in the back of the fourteenth level, north of No. 5 shaft, which are yielding largely of rich stamp, barrel, and mass copper. This run of rich ground commences about No. 5 shaft, and extends north to the boundary line. As far as it has been opened and stoped in the back of the fourteenth level, the show of metal is equally as good as in the level above. The rich winze north of No. 5 shaft is also in and will open this fine block of ground. The Man engine has been extended down from the eleventh to the twelfth level, and in a short time will be put down to the thirteenth level. The fame of this wonderful machine appears to be almost world wide, for crowds of visitors almost daily throng around the mine, desirous either of seeing it in operation or taking a ride down on it. . . . . In two weeks work will be commenced on the Green Amygdaloid belt cut in the great cross-cut, and a thorough test of its mineral value made by drift stoping. . . . . An examination of the rock daily being brought up out of the Hancock mine and broken at the foot of the shaft, will convince the most skeptical of its richness in all the favorite forms of copper, and as for quantity, look at it there and also in the mine in the bottom, sides, ends and backs of the stopes. It can be found on every hand, and that is all that can be said of any mine in the country. During the past week the capacity of the stamp-mill has been increased by the addition of eight heads on the west side, making the total number now employed forty-eight, which crush from one hundred to one hundred and twenty tons per day of twenty-four hours. Last month the forty heads of stamps in use produced forty tons of stamp mineral, or one ton per head. The mill can be said to be in good running order, for the first time almost since it was set up, and no further extraordinary delay is anticipated. The Collum washers, we noticed, were doing their work splendidly, utterly eclipsing the new machines which have for some time been on trial alongside of them. . . . . A correspondent, not knowing that the Cliff mine had declared a dividend, asks "the directors of such mines as the Quincy, Pewabic, Franklin, Cliff, Central, and Copper Falls. Are we to have any dividends declared during the present month? This is a question of considerable interest to myself and others, and we would very much like to receive a favorable answer from one or two of them, at least those whose agents have both verbally and in writing stated their mine was earning several thousand dollars per month. The cost of producing copper last year, as given in the various reports, was about thirty and a half cents per pound. Assuming that the reduction of about twenty per cent. has been made this season, the cost has therefore been not to exceed twenty-six cents, giving a profit on all copper sold of six cents per pound, or $120 a ton, which I claim is a low and exceedingly fair estimate. It is evident, then, is it not, Mr. Editor, that our mines are earning money, more or less, according to their products. And does it not look to you as within possibility that the larger ones should be able to make a small division of those earnings?" . . . . The Lake Superior *Miner*, August 4th, gives us the following news from the Ontonagon district: At a total cost of $37.24, $95.70 worth of copper was recently extracted at the Ontonagon Smelting Works from 6,194 lbs. of mineral from the None Such mine, which can be mined and delivered at the works at $6 per ton, thus leaving a profit of $15 per ton to the company. . . . . At the Henwood mine Capt. Trevarro avers that with the exception of some half dozen loads of rock, out of 230 tons stamped in seventeen and a half days of the past month, there was no distinction, no observable difference in the rock, yet these 230 tons yielded 4 tons 758 lbs. of mineral, or a little over two per cent., without counting any of the barrel work taken from the vein in breaking for the stamps—this generally amounts to a half per cent., a half to three-fourths of a ton of copper to one hundred tons of rock. The evidences therefore are that the vein matter is not so far below, if indeed it is any less, than the average of stamp veins in the country. . . . . The Aztec is about to emerge from the financial cloud that has recently covered it. The openings in the mine are, it is said, showing very well, and the mill, though running but half the past month, has probably produced over four tons of mineral. . . . . At the Toltec work has been commenced with $20,000 additional paid up capital. . . . . At the Ridge mine the yield of copper per fathom of ground on the South or Evergreen lode, is generally deemed large, probably greater than the average of veins in the country, yet the company do not seem inclined to push the openings very fast. The monthly product cannot be very largely increased without a mill, while ten to twelve tons per month of that class of mineral could readily be added to the present yield with a comparatively small additional outlay. . . . . There is, as far as we could learn, no material change in the other mines of the district; the most of which have met with favorable results the past month. . . . . Touching the Copper Falls mine, a correspondent writes: The vein shows splendidly especially at the Sixty which is now in one hundred feet beyond the point where the mass or masses was first struck. A sand blast on Saturday the 21st ult., in which sixteen kegs of powder were used, threw down not less than fifty tons of copper. Just at this place the stope is opened for twelve feet in width without finding the hanging-trap, the vein for that size being literally full of copper. . . . . The Lake Superior (Marquette) *Journal*, August 3d, says: Although we have endeavored to procure the reports from the different companies, we have only received that of the Jackson and Lake Superior companies. The Jackson company have shipped from July 9th to August 1st, 1,741 gross tons. The Lake Superior during the past week, 3,832 tons. . . . . The editor of the Racine (Wis.) *Journal*, who with a large editorial party has been visiting Marquette, writes: "Marquette contains a population of about 3,000. The growth and prosperity of the town rests upon a solid basis—it is iron—this being the port from which most of the Lake Superior iron is shipped. The nearest mines now being worked are at Negaunee, about twelve miles distant. Here the whole country seems to rest on ledges of iron ore. The hills are rock-ribbed with it. The earth is red with it. Everything is stained with the rust of it. We spent an afternoon in visiting the Lake Superior, Cleveland and Jackson mines, which are from two to three miles west of Negaunee. The ore is a very rich oxide of iron, and the mining is as yet all superficial. It is simply quarrying. Vast and cavernous inroads have been made into the hill sides, but there seems to be no end to the supply. Ages will elapse before human muscle, aided by all the appliances of mechanical skill, the force of gunpowder, and the tireless arm of the steam engine, can have exhausted these vast deposits. The great bulk of the iron is shipped to Ohio and Pennsylvania before smelting. The cost of transportation is, at present, four dollars a ton. At the mines its net value is from two to two and a half dollars a ton. There are four iron docks at Marquette, and the immense structure at Escanaba, described in a previous letter, for shipping this ore. Very rich mines are worked near Lake Michigamme, forty miles from Marquette, and the present western terminus of the Bay de Noquet railway. There are two smelting furnaces in the vicinity of Negaunee, using charcoal for reducing the ore. These, I learn, have proved very profitable investments. The iron trade here has developed since 1856. Before that time the mines were practically of no value. With the opening of the Saut Ste. Marie canal, an avenue was opened to the Eastern market. The construction of the Peninsula division of the Northwestern Railroad, has given a new impetus to the trade. Besides iron, there are other vast stores of mineral wealth in this region, but not yet developed. Lead, silver and gold exist here, the two former in combination, forming veins in quartz rock. A company has been formed and is now engaged in working a vein of argentiferous galena about sixteen miles from this place. They anticipate that it will prove profitable, but the experiment is not yet fully demonstrated. The gold is found in combination with pyrites, or sulphuret of iron, as in Colorado, but the ore is less rich. The average yield is about forty dollars to the ton. At this rate I am told, that with the improved process, gold mining will pay. No works have yet been set in operation. The great interest at Marquette, however, will always be the iron interest. Iron the king of metals—of which the world can never get enough—which is equally in demand in peace and war; compared with which silver and gold are but worthless baubles. That metal so invaluable that a German poet, to express his sense of its worth, applied to the Deity the epithet of 'the iron-maker.'" From the Keweenaw (Eagle Harbor) *Times*, July 28th, we read: The force at the Star mine has been recently reduced, although we are assured that the appearance of the mine is good. . . . . The appearance of the Resolute mine is so flattering that the company, some of whom are now in the country, have determined to push operations. . . . As soon as the necessary arrangements can be made, operations will be commenced at Agency Point, on the Eagle Harbor Company's property. The Agency shaft No. 2, shows a good vein now, with occasional pieces of copper; and coupling these facts with the constant elaboration of the same facts by the Copper Falls Company, we are more than ever convinced that it is unsafe for

any man, no matter how great his reputation may be as a man of letters and science, to dogmatically assert that much copper will be found at such a point, and little or none at another. . . . . Instead of being several masses of copper at the 20 fms. level of the Ætna mine, it is but one solid mass, estimated at over eighty tons. The shipment of coppr from the Ætna on the 7th of July, was 21,469 pounds, and they have seven or eight tons now on hand, the product of the mine for the last month. . . . . The "indications" at the Madison mine are reported as excellent. . . . . A correspondent writes from Eagle Harbor, July 30th, that the St. Clair looks well for ultimate success.

Colorado.

The Black Hawk *Journal*, of July 31, says: Mr. Kip's claims on the Leavitt is opening out into a very fair crevice of iron. He thinks he will not have to sink much further before he shall have developed a good body of iron. He is running his stamps on custom work. . . . . To-day we observed a nice lot of ore, taken from the Liberty Lode, Eureka District, passing through town to be crushed at the Dickerson water mill. We understand that Judge Dickerson is working the Liberty, and that at the depth of 45 feet he has uncovered a very fair crevice of iron. . . . . Charley Aldrich cleared up to-day 20 ounces of very nice retort, from 3½ cords of refuse Consolidated Gregory ore. He is running the 8-stamp water mill belonging to Judge W. N. Dickerson. . . . . Gulch mining in Russell Gulch is being prosecuted with very satisfactory results. We were very agreeably surprised, on a recent visit, on seeing so many claims being opened to pay. We learn that the Pleasant Valley Company are now taking out at the rate of four ounces per diem. . . . . Reports from the Bear River mines are very conflicting. Yesterday morning it was currently reported on the streets that a man had arrived in Central from that section, having in his possession $3,000 in dust. Upon making inquries we were informed that a man had seen a man who had seen another man, and that man had heard some other man say that they could get ten cents to the pan in gulch 98. After satisfying our curiosity we came to the conclusion that some folks have Bear River "on the brain" terribly. . . . . The Ni Wot company have started their new mill in Ward District. Its crushing apparatus consists of 50 stamps, 25 of which are running. The company has very excellent ores. . . . . Anson B. Leggett got in last evening from the Snake River silver mines. He represents the development of that section as being pushed foaward steadily' Mr. Lynch has not as yet commenced the erection of his furnace, owing to a lack of cement and fire-brick. So soon as the necessary material arrives he will at once commence its erection. . . . . From the ***Register*** we learn that Mr. Stowell recently took out and loaded, in one hour and fifty minutes, from his silver mine at Argentine, nineteen mule loads, containing two hundred pounds each of heavy sulphuret ore, which he packed down to Georgetown to be smelted in his new furnace there. . . . . From the ***News*** of August 1st we collate as follows: A specimen of ore from the Anglo-Norman lode, in Peru Disirict, Summit county, Colorado, was sent to the ***News*** two days since. Commodore Decatur is the prospector and owner of the lode, in connection with Messrs. Reno, Lane, of U. S. Branch Mint, and General Jim Lane, deceased, of Kansas. The Commodore, learning that we had received the specimen, requested it of us for assay. The following is the certificate of Mr. Schirmer, assayer and analytical chemist of this city, and a graduate of one of the most popular mining schools of Europe,

DENVER, Colorado, July 27, 1866.

This is to certify that I have assayed a sample of ore, being a mixture of ruby silver and silver-glance, from the Anglo-Norman lode, Peru District, Summit county, Colorado, which was handed me by Stephen Decatur, and I have found the same to contain seventy and three-tenths per cent. of pure silver per ton of 2 000 pounds avoirdupois, which is equal to $27,906.

F. SCHIRMER,
Assayer and Anylytical Chemist.

Another assay from the same specimen, made by Fred. Eckfeldt, assayer at the United States Mint, gives sixty-seven per cent. of pure silver per ton avoirdupois, being a yield of $26,900. The specimen from which these assays were made was taken from a shaft only four feet deep, the crevice between the wall rocks at this depth, being about three feet in width, and the Commodore informs us, that there is good indications of a vein, not less than six inches in width of the same ore as this specimen. . . . . Joe T. Boyod writes from the Snake river district: Everything is somewhat dull here just now, owing to the Bear river exodus. I think some of going there, but prefer to wait further developments. Lynch & Peall commence work on their smelter to-morrow. Messrs. Danforth & Berry are talking of putting up a testing furnace in Peru district. There has been very little jumping of claims here, new prospectors generally respecting old discoveries. Peru City is getting to be quite a place. . . . . Recently a cloud suddenly dissolved on a mountain side at the upper end of Pleasant Valley. When the flood reached the sluices and flumes of the Pleasant Valley Mining Company, the water came in a wall ten feet high. The flumes were torn to pieces and swept away. A mile or more of flume was torn out and the whole gulch was filled up. All mining operations below the Pleasant Valley company's were destroyed. Mr. McCubbin's works, which are the next above, were but partially destroyed, as the upper edge only of the cloud and flood reached his works. The loss of the Pleasant Valley company is estimated at twenty or twenty-five thousand dollars. No amount of foresight and care could have prevented this destruction of property or have provided for such a flood. . . . . Rev. L. M. Koons has shown us some ore from the Congo lode, taken from a shaft at the depth of fifteen feet, which assays a fraction over $240 per ton. They are down now twenty-five feet, and have a crevice three and a half wide, and a streak of solid Galena fifteen inches wide. The shaft is only 140 rods from Lyon's smelting works, which adds greatly to the value of the lode. . . . At South Boulder the Rollins' company have started the wet side of their mill, and fired up their desulphurizer. They will commence running the ore through this week. The company is working on the Perigo Maurer and Renton lodes, and is one of the most prominent in the country. Great hopes are entertained that the mill will prove a success. . . . . The editor of the ***News***, writing from Empire, says: Clear Creek is still very high. It has been unusually full for two or three months past, but never at exceeding flood height. In consequence of the continued high water, no mining whatever is going on in the bars. A few began work but were driven out. The first new improvement noticeable in coming up, are the works of Gen. Buford, two or three miles below Idaho. Quite a little village, named Masonville, has sprung up at that point. The General is building roads, opening leads and preparing to put up some extensive reduction works. . . . . At the head of Payne's Bar we noticed a new and very complete arastra going up. The next large improvement is above the mouth of Fall river, where the Copeland Company—we believe of Boston—have built several houses, and are preparing for the erection of extensive mill buildings. A number of other companies are working along near the creek, but invariably—with the above exceptions—at opening their mines, instead of building mills; a very sensible plan, surely. Mr. McIntyre was starting up his Downieville mill this morning, after some weeks' rest. He is working the Mason process. . . . . At this place, Empire, but one mill, that of the Peck Company, is running. . . . . At Georgetown not a mill is running. They are hanging great hopes upon the smelting furnaces. One has been at work and run out some five hundred pounds of bullion. It belongs to Messrs. Cree, Smith, Walley and Cassady, of Denver. They have stopped operations until a wagon road can be built to their mine, which is about a mile and a half distant, and near the summit of the mountain. It will require a month to build the road, after which time they expect to be able to run day and night. Their furnace is a reverberatory, built by Mr. Bennett, a lead miner for over thirty years past. He is very much of a gentleman, and seems to understand his business thoroughly. The ore is galena; mainly from the H. W. Beecher vein, and yields about forty per cent. of metal. The lode has a crevice of five or six feet, but only twelve to eighteen inches of that is first-class ore—solid gelena—the balance being a mixture of galena and quartz. Another vein near by—the Muscovite—gives seventy per cent. of metal, but it only assays, from the crude ore, about forty dollars to the ton in silver. All these veins are expected to grow richer as they go down. There are very many other galena leads in the neighborhood, and the district is now believed to be richer in silver than gold. . . . Just above Georgetown, another furnace is being built by an Eastern company—a Mr. Stowell, as superintendent—which will soon be ready for work. It is a blast-furnace and will introduce some new principles. It will start on Argentine ores, of which fifteen or twenty tons are already carried down. This ore has the appearance of being very excellent. It is packed eight miles on donkeys at a cost of about twenty dollars a ton.

Nevada.

The Comstock.— A telegram from San Francisco, Aug. 13th, says: "The market for the past week closed firmer for dividend-paying stock. Hale and Norcross carries a surplus of $50,000 toward the next dividend. The Savage has risen $200 on improved appearances, and carries over $35,000 above the last dividend. The Crown Point is raising 100 tons of rock daily. The profit of the Yellow Jacket for July was nearly $20,000 over the dividend. The Empire yields 75 tons of ore daily, and carries a surplus of $16,000. Reports from the Overman indicate an improvement. . . . . The ***Enterprise***, of late dates, says of the Hale & Norcross: "The good bodies of ore found in the lower levels of this mine still continue to hold out well, with no sign of decreasing or giving out. Other parts of the mine are also looking well. The aggregate receipts of bullion from this mine for the month of June were $104,247 33, the ore crushed averaging a yield of $45 92 per ton. A dividend of $75 per share has recently been declared. For years the Hale & Norcross was worked without a cent of income from it, nothing but outgo, and it is no wonder that one stockholder after another failed to pay their assessments, and were sold out—the delinquent share being often purchased by parties who in turn had to be sold out. But success at last attends the unceasing efforts of those controlling the claim, and those who at this time are in possession of interests in that now famous mine have the agreeable felicity of receiving a substantial reward for their perseverance. The lower level of the mine is 700 feet from the surface, and from this level and one or two next above it is taken the best pay ore; 2,270 tons of ore were crushed from this mine last month, and fully as much more will probably be the yield for the present month." . . . . . Of the Yellow Jacket it says: "This prominent mine at Gold Hill, under the excellent management of Superintendent Winters, still continues to yield large quantities of good pay ore, some of it being very rich. We made an item a few days ago of the rich body of ore found in the lower level of the old portion of the mine, 535 feet from the surface, which gave such a fine yield of bullion, but a small proportion of which was silver, it being principally gold, which was hardly to have been expected at that depth. Nothing could be more encouraging than this finding of such good bodies of ore at the lower levels, and it is to be hoped that it may continue to an indefinite depth, which indeed it promises to do. The total receipts of bullion last month amounted to $292,274, which was produced from 87,116 tons of ore, being an average of $33 54 to the ton. The affairs, financially and otherwise, of this company are in a very satisfactory condition and a dividend of $50 was declared on the 15th July. . . . . The Crown Point mine has stopped hoisting ore for the present, for the purpose of retimbering their shaft and putting in cages. In the meantime they are getting pay rock through a tunnel back of the hoisting works, and forwarding it to the Marysville mill for reduction. The Rhode Island mill, belonging to the Crown Point Company, is also being repaired, and a new engine of 75-horse power and a lot of settlers will be put in, when they will be ready to start up about the first of August. . . . . At Ruhling & Co.'s assay office on B street, yesterday, we saw two very fine bars of bullion worth, as per assay, $2,400, the product of only five tons of ore from the Overman mine, American Flat. This rich first class ore was worked at Dall's mill, Washoe City, and in the mine there is said to be a goodly quantity more of it in sight. Under the superintendence of Mr. Maxwell the Overman is getting along finely, and will some day or other be among the dividend paying mines.

Lander.—The Reese river *Reveille* says: The following is a table, compiled from the books of C. O. Barker, County Assessor, of the returns of mines which have produced bullion during the quarter ending June 30, 1866. The amount of ore obtained from each mine enumerated, as well as its average yield per ton, are specified. No amount less than a ton, of which there is a large number entered on the assessment roll, showing a high grade of ore, has been given from any mine:

NAME OF MINE.	TONS.	LBS.	AV. PER TON.
Boston and Nevada	168	1930	$73 53
Black Rock	7	——	95 07
Brick Yard	6	585	110 94
Camargo	90	——	82 58
Cramer & Farrell	4	——	118 03
Corcoran	6	——	152 19
Confidence	4	——	176 43
Diana	3	——	163 44
Edsell	75	1914	56 72
Folsom	4	1875	64 37
Fortuna	46	1913	229 49
Fort Yuma	18	1500	33 00
Foster	2	——	68 75
Great Eastern	40	47	202 77
Granite Tunnel	1	——	109 40
Idora	76	472	159 45
I. X. L.	2	1611	96 64
Keystone	1	170	226 18
Keown & Thompson	2	779	130 84
Lapwing	2	1735	146 84
Metacom	8	——	88 68
Manhattan Company	264	——	102 40
Mary Wray	2	359	112 48
North River	13	924	91 16
Owen Dale	3	101	78 16
Quintera	2	323	70 32
Russell	10	1095	83 83
Silver Hill	4	——	90 35
Roanoke	38	——	89 72
Razette	7	848	I25 05
Revenue Extension	2	——	166 30
Savage Consolidated	357	——	106 03
Silver Chamber	3	509	32 00
Santa Clara	3	——	34 99
Star Ledge	17	——	45 57
Sam. Brannan	1	900	186 37
Silliman	9	——	58 06
Talisman	1	747	89 22
Toulumne	2	1555	303 14
Tuscarora	8	——	205 80
Vancouver	6	800	109 45
Whitlatch Union	162	1000	79 40
Washington	6	409	105 50
Yankee Blade	84	——	368 43
Zent & Chase	24	1323	

Accounts from the Metacom mine and mill are excellent. By the time the mill is completed it is estimated that $150,000 worth of ore will be ready for crushing, none of which will pay less than $60 per ton. . . . . The Buel North Star mine has been temporarily closed; cause—lack of funds. The ***Reveille*** says it is in the best condition to be speedily brought to fruit.

Union.—The Ione *News* of July 21 says: In our own immediate vicinity there is some work being done upon the mines, and the Knickerbocker Mill is running steadily.

Mammoth.—In Mammoth District there is considerable work being done, and the Mt. Vernon Company, under the superintendence of Capt. Knapp, is pushing work upon their claims.

Twin River.—This district manages to hold its own, despite the excitement upon the discovery of "big things" to the south and east of there. Work is being rushed ahead upon the Murphy Company's mill, also upon the mine, and many other claims throughout the district are being opened, with gratifying result.

North Twin River.—In this district much work is doing. The La Plata Company have a large force at work upon their claims, and from present appearances it is probable they will in a short time commence the erection of a mill. A gentleman who was over in Smoky Valley last week, informs us that he saw a pack train, loaded with ore from the Twin Ophirs—belonging to the La Plata company—on its way to Austin. The ore was in immense chunks, two of which was about all a mule could carry. This ore is to be reduced at the Keystone mill, in Austin, and should it yield as expected, the company will immediately erect a mill.

Philadelphia.—To the east of Twin River is the already famous Philadelphia district, where D. E. Buel is putting up a mill, which is expected to commence operations inside of twenty days. There is already a considerable population in that district, and should the ore by mill process meet expectations, Philadelphia will soon be one of the most populous districts in the county.

Hot Creek.—This district is farther South, and from all accounts bids fair to equal anything yet discovered. We have seen much good ore from this district, and from the size of the ledges, as well as facilities for working, we should judge that Hot Creek district will soon rank among the best.

San Antonio.—This district, forty-five miles south of Ione, has always maintained a leading place among the mining districts of the State. There is a ten-stamp

mill in it, though we are not advised as to whether it has yet commenced operations. There are many claims here equal to the best, and San Antonio will soon make itself heard.

Silver Peak.—Here there is not much doing at present, though it is well known that some of the richest mines in the State are in this district.

Northumberland.—The Ione *News* says: A new district has been organized in the second range east of here, called the Northumberland, and which promises to equal the Philadelphia district, of which it is a near neighbor. This district, we are informed, was discovered by W. N. Cummins and J. C. Merrill, of Mammoth, together with other prospectors who were in that vicinity. We have been promised full information in relation to the discovery, but as yet have heard nothing more than it is supposed to contain many good ledges, with a fair supply of wood and water.

Humboldt.—The *Register* of July 21st, says: At Oreana, Nason & Roots have been continuing—are now continuing—experiments with the smelting furnaces. Mistakes have interfered to nullify all attempts, thus far, to bring the work to a complete success. The last mistake was in the vapor furnace: they now have good fire-bricks, and we trust that, having got so far along, their next effort will be crowned with success.

Pahranagat.—A letter from W. F. Nichols, in this district, says that the place is improving rapidly. Quite a number of the ledges were being worked to advantage, and Nichols thinks all they need is the means of reducing their ores to insure an early shipment of silver. He complains of the great and pressing need of communication with the interior of the State, their letters being carried nearly altogether by Indians.

Idaho.

From the Owyhee (Ruby City) *Avalanche*, July 21st., we condense as follows: The Ainsworth mill, that will commence work next Monday, has been thoroughly overhauled and new machinery replaced the old. It is abundantly supplied with rich ore, and can be put on the list of mills that run all the time. . . . Messrs. Bell & McCann have taken gold dust enough out of their claims in Jacob's Gulch this summer to make the eyes of an old forty-niner bug out. We saw—on Wednesday—a partial clean up of one week's run and there must have been $2,000. As much more remained in the quicksilver, as we only saw the bright gold from the upper sluices. There is considerable coarse gold in it—many pieces weighing from two to twenty-five dollars. One piece weighed just twelve ounces, but was part quartz. . . . The Varney & Carrico ledge, situated on Florida Mountain, and southwest of our office one mile, was discovered July 10. Messrs. Carrico & Co. had spent sixty days looking for it, knowing one must be in the vicinity, from the large quantity of rich float quartz to be found along the mountain. Nine ounces of the float quartz gave two dollars in gold by hand process. Rock from the ledge does even better than that. Cover it with borax and subject it to the heat of a forge, little globules of gold and silver will come to the surface and literally cover the ore. In considerable of the ore gold may be seen with the naked eye. On Wednesday the shaft was down ten feet, and a ledge of thirty inches of quartz developed. It is much clearer defined than most ledges on War Eagle at that depth. Several tons were at the dump pile, and four men engaged sinking the shaft and raising more ore. . . . We understand that the noted case of Hays & Ray vs. Poorman—properly, Wm. M. Willis vs. P. F. Bradford et al.—has been arranged between the principal parties so the work will be temporarily worked and proved up. It has been a very exciting one among all classes and conditions of our citizens in consequence of its fabulous richness. . . . The Dardanelles mine has two shafts, of five men each, taking out ore. It is being mined from near the centre of the ledge by a shaft which is now forty feet deep, and is being sunk deeper every day; also, are "stoping" on north and south sides of the shaft. The ore looks richer as it is found deeper. Free metal can be seen in some, and the mineral stain is seen in every piece of the ore. The general appearance is of a light gray color, with pyrites of iron, dark mineral streaks, and an encouraging amount of black sulphurets. There is considerable decomposed quartz which we know to be rich. Had not washed a pan of dirt for over three years, and from a few pounds, washed on a common shovel, we obtained at least a thousand colors of gold. The ore generally appears much more flattering than when we visited in the winter. The ore that is now taken out is being crushed at the Cosmas mill. Will test one hundred and twenty tons, and if the yield is satisfactory, a nearer and better road will be constructed via Long Gulch. . . . There is but little money in circulation, consequently goods are sold for trash instead of money. Quote flour at $18, and bacon at $60 per cwt., would lead distant parties to believe the merchant was receiving these prices in cash, when, in truth, he would be getting the value of only $14 for the one, and about $50 for the other. Creek dust, as it circulates, is probably worth an average of $10 per ounce; and Bannock, $13. Legal Tender notes are current at 85 cents on the dollar, while in fact they are worth about 72. In this miserable condition of the currency, what possible use would there be in quoting selling prices of merchandize in Owyhee?

California.

Nevada.—The *Transcript* says: A new shaft, three by six feet, has been sunk in the Big Blue ledge forty-five feet, and is now opened into the old tunnel. A fine engine for pumping and hoisting is being put up, which will be completed in about three weeks. The company will then commence taking out rock. . . . Yesterday a splendid ledge was struck in the vicinity of Gold Flat. The rock from the croppings shows lots of free gold, and it is estimated by those who have examined it that it will pay fifty or sixty dollars to the ton. It has been named the P. P. ledge. . . . S. F Butterworth, Superintendent of the Almaden quicksilver mine; L. L. Robinson, of Pioche & Co., and a number of capitalists, have purchased several extensive gravel claims upon Humbug creek, near the town of North Bloomfield. One set of claims were purchased for $200,000, and an adjoining set brought $150,000. . . . The Grass Valley *Union* says: From an ounce and a half of rock taken from the celebrated Stockton ledge, crushed in a common mortar yesterday morning, one dollar and seventy-five cents was realized. The rock was not selected, but taken promiscuously from a pile that lay on the ground. . . . The *National* says: Work at the Ophir mill has been suspended for a week or ten days, in order to make a change in the amalgamating pans and other repairs necessary. . . . The Ione mine still continues to yield handsomely. The company are now working at a depth of about 170 feet below the surface of the ground, on the second level. They intend to go about thirty feet further down, when they will begin work on the third level. A gold bar, worth $5,000, was the result of two days' run of the mill. . . . A gold brick, valued at about $6,000, was shipped yesterday, from the banking house of Findlay & Co., the gold being the proceeds of a few days' run from the Sucky mine. . . . Within the past few weeks, says the Nevada *Gazette*, some of the most extensive mining enterprises ever projected in the State have been inaugurated in this county. For a month or more, S. N. Stranahan, a practical and scientific miner, has been engaged in tracing out the great Blue Lead, and has come to the conclusion that the main channel in this county runs under the Chalk Bluff ridge. Accordingly, he made a location in the latter part of May, commencing at the southwesterly end of the bluff and extending up the ridge to Steep Hollow, a distance of nine miles. He is associated with San Francisco capitalists, and over a thousand names are on the notice. The company is known as the Chalk Bluff Mountain Blue Gravel Company. Another company, organized by D. O. McCarthy, who is associated with other prominent San Franciscans, have made a location of ten miles, commencing at the upper end of Mr. Stranahan's location, and running up the ridge to a point between two and three miles above Bear Valley. This company rejoices in the appropriate and somewhat imposing name of the Ancient River Channel Blue Gravel Mining Company. The claim is 52,800 feet in length, and 1,056 names were used in making the location. The second location was made on the 12th inst. The lead has been traced the entire distance of the two locations, crossing Steep Hollow just below the tunnel of the South Yuba ditch, and Bear Valley, a short distance below Tomkins' house. As soon as the necessary arrangements can be made, machinery will be put up at the lower end of the claims, at Chalk Bluff, also at the dividing line between the two claims, and shafts or inclines sunk to the bed-rock.

El Dorado.—The Folsom *Telegraph* says: Mining in this section of the State is decidedly looking up. Men with capital and men without it are prospecting, opening, and developing quartz, cement and bank claims. Rich quartz and cement prospects are the order of the day and numerous sales and transfers of interests are being daily made in and about the borders of Sacramento, Placer and El Dorado counties. It is confidently believed that the celebrated "blue leads," so rich and extensive in the upper part of Nevada and Placer counties, have been struck in El Dorado county, near Placerville. We saw an assay, made by Palmer & Day, Assayers in this place, from two hundred and fifty pounds of average cement from the claims of the Western Tunnel Company, whose claim is about two miles from Placerville, from which seventeen dollars in gold was realized.

Mono.—A correspondent writes that: Ore from the Elmira and Crocker lodes yielded a trifle over $300 per ton: not by fancy assays, but in good, solid bars, and the result of the smelting of the first batch of some 30 tons. This "run" came within 3 43-100 per cent. of the assay; the best return ever made on the Pacific Coast. The Haskell patent smelting furnace will, with a few trifling alterations, succeed in smelting and reducing those ores of Hot Spring, Montgomery, and other districts, that now defy the mill process. Owing to the charge, $100 per ton, for smelting ore, by the furnaces already erected in Mono county, an immense quantity of good ore, worth from $75 to $125 per ton, is thrown aside. By the Haskell and Risdon plan, this could be reduced at a cost of $40 to $50 per ton. The necessary fluxes are on hand, and can be procured for simply the expense of hauling.

Montana.

The Montana *Post*, of July 21st, comes to us enlarged—a good sign of the wealth of the region it represents. From its columns we condense as follows: On Alder Gulch perhaps still more of the precious metal than has yet been produced lies buried beneath the surface. Lack of water is the great drawback. The Virginia Water Ditch Company have so far advanced their new works that a large additional supply of water will be brought into the gulch early next week. . . . . During the week ending last Saturday evening, Mamma & Co. employed fourteen hands, and the product of their labor amounted to $1,870. Two cleanings up, on the same claim, during the present week, exhibit about the same relative amount of dust for the labor employed. . . . . Childs & Co., with three hands, took out $600. . . . . Myers & Baker, last week, with four hands, took out from $500 to $600, and the same amount of labor is producing about the same result the present week. . . . . Day & Co., with seven hands, last week cleaned up $900, and will clean up about $1,000 the present week. . . . . Other parties on claims in the vicinity of those above named, state the result of their labor at about the same relative amount for the force employed. . . . . The Seneca Falls 15 stamp quartz mill, 40 horse power, commenced operations in Summit District last fall, and ran, in all, forty-seven days, yielding $12,324.84, or an average of $26,323 per day. The expenses were a fraction less than $150 per day. This mill commenced work under every possible disadvantage. Snow was deep and the ground frozen. No quartz had been taken out, and the opening of the lead was attended with great difficulty and expense. Roads had to be made. Wood was held at enormous prices, and food for animals very expensive. Yet it run at a profit of more than $30,000 per year. The mill was unsupplied with any other than the old process of saving gold on the plates. The quartz was taken from the Kearsage, Cavarone, and Keokuk lodes. . . . . Correspondence from Bannack, July 17th, runs thus: Messrs. Hopkins, Clark, Fowler, Murray, Brown, Prof's Eaton and McCord, Woods of the Huron, Wood of Dacotah, No. 12, Sullivan and Son, Esler and Reem, are here, and the public may expect some developments that will set aside the doubt about the richness of the quartz in this county. They are preparing to build furnaces and erect mills, and are giving employment to all who are desirous of exercising the muscles. Messrs. Robinson and Foster have also arrived from the States. They intend turning their attention to their former business, prospecting. Quite a number of Bannackites have also returned from the new mines, to make a "raise" at Bannack. They report the country overrun, and that frequently when a new gulch is struck, that there are not less than five hundred people to a claim. There is no richer gulch than this; besides this, hundreds of miners can make wages digging, at Ball Mountain and White's Bar, three miles below town. . . . . A letter from Prickly Pear City says: One of the two companies sinking shafts on the creek will continue until bed-rock is reached. Good prospects have been obtained on the bars, on which the city is built, and a company of enterprising Germans have taken up the ground and have commenced the building of a large flume across the creek through which the water from the ditch, on the east side, will be brought on to the bars. Reports of a stampede to a dry gulch, near Blackfoot, is rife. Madam rumor hath it, that the fortunate discoverer panned out in one day, the sum of seventy-two ounces of the precious metal.

Kentucky.

From the *Industrial Gazette* we learn that Greenup county contains quantities of iron ore, cannel and bituminous coals, shale, limestone and other minerals. Her bottom lands are good for agricultural purposes. Uplands for raising stock. There are two railroads tapping the coal fields for carrying the coal to the Ohio river, and also a new route has just been surveyed and will be put under contract this season. This route is surveyed from Greenupsburg, on the Ohio river, to the coal field near Greenup Furnace, a distance of fourteen miles. This road is also to connect with the Lexington & Big Sandy railroad. It is supposed that petroleum oil may be found in this county. Several wells have been bored for several hundred feet but without procuring oil in paying quantities. Competent judges believe that oil can be found by boring deep enough. Those who have been engaged in boring heretofore have been speculators, and soon got discouraged and abandoned their wells. There is one well still in operation on the bank of the Ohio river one and a half miles below Greenupsburg, and the company are determined to develop and thoroughly test whether there is petroleum here or not. This well is upwards of 1,200 feet deep and still progressing with some prospect for oil.

West Virginia.

A correspondent writes to the *Tribune*: You have doubtless noticed in your exchanges extravagant accounts of a lode of silver being discovered on the farm of Wm. Cunningham, in this vicinity. Having been at the "mine" and seen the metal, I think it is safe to say that the report is a hoax as far as silver is concerned. The metal as it is brought up by the sand pump resembles chips of cast-steel, and is about as malleable. It oxydizes in the air, and is attracted by the magnet. In nitric or hydrochlorine acid it slowly and imperfectly dissolves, and by the chlorine and collodion tests I failed to detect a trace of silver, but with cyanide of potassum and tumeric acid I had an unmistakeable evidence of a large amount of iron, while an alcoholic solution of a muriate had the taste and smell of the tincture of iron. There is no upheaval or any sign of anything like volcanic agency which might account for the presence of silver in the carboniferous stratas. The Pomeroy salt-rock and several stratas of coal are below, and it is said that six feet of coal is forty-five feet above the metal.

Tennessee.

The Memphis *Post* of August 10th, says: Captain J. P. Boughner, formerly of the steamer "Lady," now cultivating the farm purchased by him and Mr. Levi from General Wright, situated on the Lower Horn Lake road, about two miles from Horn Lake and nine miles from the city, has shown us a specimen of lead associated with quartz, showing, we understand, in its analysis, a small percentage of silver. Few supposed—certainly we did not—that we had a mine of lead and silver so near Memphis. The percentage of lead in the specimen shown us by Captain Boughner is large.

Kansas.

Shafts have been sunk in many places in Kansas for coal, the surveys made by prominent geologists warranting the efforts made. Coal has been discovered in large quantities upon the prairies and within a radius of ten miles from Leavenworth, but there are parties who are now engaged in boring for coal within the city proper, and a shaft has been sunk five hundred feet, and their prospects improve the deeper they get.

Nova Scotia.

A correspondent of the Glasgow *Sentinel* writes from Halifax: The town of New Glasgow is mainly remarkable for the coal and iron that abound in its neighborhood. The Acadian coal mines are the property of the Province. The Acadia Company have obtained a lease extending, if I mistake not, to sixty years, during

which period they pay to the Government a royalty of about sixpence the ton on all the coal excavated. They have only commenced operations, having turned out, according to the last report furnished by the Chief Commissioner of Mines, 6961 tons. Workmen's houses of a respectable and commodious character are being constructed. There are two large apartments below, with attics with two other rooms—houses much better adapted for workmen's families than those erected for the same purpose in Scotland. This company is at present working a valuable seam of oil coal, the only one yet discovered in the district, and said to be as rich as the celebrated Torbanehill, respecting which there have been so many desperate legal battles, which ended after all in a compromise. A cargo of this coal was being shipped when I was there. If the mine turns out as well as it at present promises, it will prove a source of wealth to the proprietors. The shafts are constructed in this district mainly on the slope principle, which certainly obviates the danger in descent to which the ordinary vertical shafts are liable. The declivity is at an angle of about twenty degrees, there being two parallel shafts to each mine, one of which is exclusively employed in hoisting the wagons after they have been filled with coal. I visited one magnificent seam, where the mineral has been just reached. It is nineteen feet six inches in thickness. The coal is of first-rate quality. It is of a greyish color and light. Dr. J. W. Dawson, of Montreal, who in 1855 wrote an able book on Acadian Geology, published by Oliver & Boyd, speaks of another seam, which was at least twenty-four feet in vertical thickness, as existing in the same district, and worked, I presume, by the Albion Company, to whose operations I will have occasion to refer immediately. The Doctor makes the following calculation: A cubic foot of Pictou coal weighs about eighty-two pounds, rather less than twenty-eight feet being equal to a ton of coal; hence, a square mile of this seam would yield in round numbers twenty-three million tons of coal—an enormous quantity as compared with the present annual produce, but less than two-thirds of the annual consumption of Great Britain. The seam to which I previously referred is within three feet of the surface, so that it has been reached by means of a slope at a very trifling expense. . . . . At the Albion mines operations have been carried on by this company since 1825. At present they employ about one thousand men, with the prospect of employing more. They are at present engaged in sinking a shaft, which, when completed, will provide employment for at least from three to four hundred hands more. . . . . Mr. Gladstone, in one of his recent masterly speeches, spoke of those two minerals (coal and iron) as constituting the basis of British prosperity, and one of the most able and energetic Provincial Statesmen, Dr. Tupper, in a speech which he delivered in Quebec, said: "If you look at the colony which I have the honor to represent, you will find that its mineral resources cannot be excelled on this side of the Atlantic. You will find a vast country occupied by as valuable coal deposits as are to be found on the surface of the earth. You will find iron mines in the province of Nova Scotia which, in quality, will successfully rival the finest Swedish iron. You will find iron and coal associated with limestone. In fact, you will find in Nova Scotia all those chief natural characteristics which have made Great Britain the chief commercial mart of the world." These sentiments, so forcibly expressed, are based upon actual facts ascertained by a practical process of exploration. The coal prospects in Pictou, the county in which New Glasgow is situated, is thus referred to in the last report of the Chief Commissioner of Mines: "A very large extent of the country has, during the year, been taken up in Pictou under exploring licenses. Searches have been prosecuted, too, with vigor, and several valuable seams of coal have been discovered in localities where it was not previously known to exist. Undoubtedly several new collieries will be open in this county within the incoming year, and present indications favor the conclusion that within a very short period the whole of the Picton coal basin must have become thoroughly explored." There is at present in course of construction a line of railway from Truro to New Glasgow, which, when finished next year, will complete the communication by rail between Halifax and New Glasgow.

Singular Experimental Discoveries.

Experiments have recently been made by M. Tresca, Civil Engineer of France, upon the flow of solid bodies. In studying the flow of liquid bodies out of any receptacle, it is observed that when a liquid is forced through a round hole the liquid at the bottom of the vessel is not first exhausted, but at the centre of the mass or core. The phenomena attending the flow of liquids are of the utmost interest to hydraulic engineers, but on account of the peculiar nature (liquid) of the substances operated upon have hitherto not been satisfactorily determined. The following experiments made by M. Tresca, will undoubtedly throw light upon the subject. The substances operated upon were lead, tin, copper, silver, iron, &c., in a cold state. He made a circular hole in a very strong cylinder, filled it with a solid mass of lead that was to be liquified, which he submitted to a strong pressure. The lead accordingly flowed out at the orifice, but no peculiarities regarding the motion or arrangement of the molecules was observed. He then substituted round discs of lead, and after the flow caused by pressure had continued, the stream was cut across, when it was seen that a portion of *all* the discs issued simultaneously from the small orifice in the shape of concentric tubes one inside the other. The lower discs or those nearest the orifice formed the external, the upper discs the internal tubes. With twenty discs of lead having a diameter of 3.9 inches, and an aggregate thickness of 2.35 inches, a jet was obtained 23.4 inches in length, the diameter of the orifice being from .786 to 1.96 inches. With an orifice of .786 the contents of the unbroken jet were rather more than a third of the entire mass of metal. With the larger diameter nearly the entire contents of the cylinder would be voided in a single jet. Small waxen tablets under the same conditions behaved in a similar manner, and to establish beyond doubt the fact that the tubes comprising the jet were arranged in the order already ascertained, the separating surfaces of the tablets were powdered with ochre, the traces of which were distinctly visible after the efflux. In an experiment where iron was the substance submitted to the process, the mould in which it was placed fractured under the pressure, but not before a comparatively small jet had been formed which admitted of its being ascertained that it coincided in its details with that obtained from other bodies. When the aperture is triangular or there are several apertures, the form of the section of the layers or concentric tubes varied accordingly.

A Living Frog in the Paleozoic Rocks.

The Louisville *Courier* relates that as the masons were preparing the large stones for the door-sills of the banking house being erected by the McElroys & Co., in Springfield, Kentucky, they came upon a living frog in the middle of a large stone, walled about with solid stone on all sides. The stone came from the quarry on the farm of Mr. Mulligan, near Springfield, about ten feet about the surface. Immediately below the stratum from which this block came, are two stratas, one thirteen, and the other ten inches in thickness. This block is about ten inches when dressed. As it lay upon the bench, it was five feet long and three feet wide. The workmen cut it perpendicularly the long way, and in dressing one of the inside edges they broke through into a small aperture near the middle each way, and discovered something in it. Fifteen or twenty citizens were called around, and witnessed the dressing of the stone, and the liberation of the frog from his old stone habitation. He began to give signs of life as soon as the breaking of the rock let in the air. In a short time he seemed sprightly and wide awake, but soon began to show signs of excitement and pain. He was then placed in a small glass jar, which was loosely corked. In this place it lived until Sunday night. This animal is of the order of the *Ranidæ*, or frog tribe, a regular Kentucky pond frog; just such as may be seen on the banks of any pond now. The stone in which it was found is a solid old blue limestone of the old *silurian* deposits, so well known in all the Bluegrass region of Kentucky; of the regular *Paleozoic rocks, i. e.*, those containing the remains of the oldest animals known to have existed. Now, there are some conclusions that force themselves upon every practical man who witnessed the liberation of this specimen of antiquity from his prison. 1. He was as old as the stone in which he was imbedded. That stone was formed around him; no doubt of that. There were no cracks or fissures there. 2. He has been while there in a state of suspended animation—no breathing holes. If he had breathed, he must have eaten, or he would have perished. There was no possibility of food reaching him in that place. Either he was a very old frog, or this is a very young stone. But we leave this to geology and geologists to settle. No doubt he was a cotemporary of "the frogs of Egypt." When he was a tadpole, there was no such things as banks; no exchange on Liverpool and New York. Greenbacks were not the currency when he retired from the public.

Mining in Sardinia.

One of the richest mineral points in Europe is the Island of Sardinia. The principal minerals found there are silver, lead and hematite zinc ores. There are also several silver mines at work and paying well, and two gold mines. Copper is found in most of the lead mines, and plumbago of excellent quality is being extracted in the Sarrabus. The greatest drawback to mining operations, is want of roads, for, besides two main roads out of Cagliari, there are few roads better than horse-paths on the island. This will be remedied, however, by the proposed new railroad which, with its branches, is to intersect the country. The next drawback is want of fuel, as coal now costs there from 50 to 55 francs per ton, which would be obviated if the companies working chartered vessels for the round; importing coal, and smelting and exporting ore, and the last and most serious drawback is the malaria. The principal mining district is on the eastern side of the island. The mines have been worked from the earliest ages and in the old workings three very distinct eras are visible. The most primitive are irregular pits sunk in the softest part of the lode, and where only the richest ore has been extracted. The tools used must have been made of hard stone or some soft metal, as no trace of tool mark is found. The succeeding mines are much more regular, and in some cases, small adits have been driven to cut the lode at different levels; also the pits are much deeper, having increased from 10 to 15 fathoms, the depth in the first mining epoch to 40 and 45 fathoms. The third workings and those immediately preceding the present ones, are the so-called "Pisan workings." They are chiefly worked by fire, and are altogether of a very much more recent date than the others. Splendid specimens of these workings are seen at the mine of San Giovanni This mine under the management of Mr. R. W. Rickard, is becoming one of the best paying mines on the island. Last year they were extracting upwards of 15 tons of first class ore per week, the average richness thereof being 80 to 85 per cent. of lead, and 40 to 45 grammes of silver to the quintal of ore. The Monte Vecchio yields about 4000 tons of ore per annum. Two separate lodes are being worked at this mine, both having a direction northeast to southwest. The outcropping of these lodes are visible for at least two miles in length. On the eastern side of the mountain there is also a lode or rather a metalliferous crosscourse which was some 30 to 35 feet wide at the surface, yielding capital ores for the mills.

Important Discoveries in Metallurgy.

Among the papers read at the closing meeting of the Royal Society's session, there was one by the Master of the Mint, which is likely to engage the attention of chemists and metallurgists, for it carries on, and with striking results, the researches arising out of Mr. Graham's important discovery of dialysis. Treating of the absorption and dialytic separation of gases by colloid septa, the first part of the paper gives the results obtained by a septum of caoutchouc, and the second part those of different metallic septa at a red heat. It has long been known that palladium and some other metals, when heated, absorb gases. Mr. Graham now finds that palladium will take up several hundred times its bulk of hydrogen, and that iron, at a low red heat, absorbs a considerable quantity of carbonic oxide; and that, contrary to long-standing belief, this gas does not act on the surface of the metal only, but permeates its entire substance. This fact is particularly interesting to metallurgists. Having taken up the gas, the iron will retain it for any length of time, and in this condition is best adapted for conversion into steel, as by the permeation of the carbonic oxide, the subsequent process of carbonisation is largely facilitated. Hence arises the suggestion that the process of acieration would be best accomplished by changes of temperature; a low red heat to fill the iron with carbonic oxide, after which it may be put away, if required, to await the final process at a high temperature of conversion into steel. Concerning another form of iron, Mr. Graham remarks that wrought iron, in the course of its preparation, "may be supposed to occlude six or eight times its volume of carbonic oxide gas, which is carried about ever after." "How the qualities of iron," he asks, "are affected by the presence of such a substance, no way metallic in its characters, locked up in so strange a way, but capable of reappearing at any time with the elastic tension of a gas, is a subject which metallurgists may find worthy of investigation." It would not be easy to overate the importance of the paper of which we have given here so brief a sketch, for it is remarkably suggestive and original throughout. When published in the *Philosophical Transactions*, with all the details, it will secure the attention it deserves. If Mr. Graham had never written more than this paper, it would suffice to place him in the foremost rank of the chemists of Europe; and it may be that metallurgists will now be ready to claim him as one of themselves for what he says about iron and other metals.—*Athenæum.*

To Pulverise Slag.

The French *Annals des Mines* states that M. Minary of the Franche Comte Forges Company, has invented a method of pulverising slag as it passes from the furnace, thus saving the expense of breaking up and handling this stubborn substance. Each furnace at Rans producing daily on an average 20 tons of casting, causes at the same time the production of 38 tons slag, or a total, including the furnace at Fraisans, of about 190 tons slag. The removal of this accumulation was extremely painful to the workmen, and so burdensome to the company that the cleaning away from each furnace required the employment of four pickmen and chargers, a carter and a horse. To obviate this, M. Minary discovered a process of easy application, which, during two years, has been successfully applied to these five furnaces. The slag empties itself out of the furnace into a cast gutter, the extremity of which is closed, but pierced at the bottom with a hole by which the matter flows out into a cast funnel. The incondescent stream presents in its upper part a darkish mixture, through which circulates a stream of water which supports four or five rapid jets, directed according to the generating lines of the interior conical surface of the piece. The liquid particles by their acquired swiftness neutralize the current, the cooled elements of which at the same time flow out with the water by a gutter slightly inclined into a sheet-iron vessel. The slags become unwontedly active, and the rapidity of their movemeat, that is to say, the draw movement with the water superinduces in a very cleanly manner the mechanical action of heat. By the time they have arrived in the vessel they have divided into fragment of the thickness of grains of sand—an elevator consisting of small buckets on an endless band raises the slag thus divided and empties it into a wagon for removal and utilization. A saving is hereby effected of from 5000 to 6000 francs per annum.

Vestiges of the Ancient Ophir.

The Natal (South Africa) *Mercury* says that a worthy missionary in Zululand, is said to have found a clue to the vestiges of the ancient Ophir, or of some city of equally old and mystical renown. These vestiges are said to have been described to the missionary in question by natives residing to the north of Zululand. They are reputed to be the remains of a large city, covering a wide area, and situated about three day's trek (which probably meant much more) from where the missionary then was. Approach to them is strictly forbidden and prevented by the chief of the tribe living in the locality. Attention was drawn to the fact by notice being taken of sundry golden ornaments worn by natives at the kraal, where these disclosures were made. The precious metal was said to have been obtained from the ruined city or its neighborhood. There is something too romantic about this story, which rests, it will be seen, on the slender foundation of a native tale. Were it not that a similar statement came to light a short time ago, through, we think, the agency of the Rev. Mr. Dohne, we should not give prominence to what might be the idle invention of a savage, anxious to prevent the white man's advance through his territory. A few months ago, a reference was publicly made to certain ruined cities, said to have been discovered in the interior, their exact whereabouts being rather vaguely defined. That there is room for archæological speculation on this subject cannot be denied. That large corner-block of the continent lying between the Transvaal and the Indian Ocean, between Delagoa Bay and Quillimaine, is almost, if not wholly, an unknown land; and yet, according to popular belief, this region was the site of the ancient Ophir, the Biblical El Dorado, while the theory has been hazarded that the Queen of Sheba came from this locality. There is, moreover, the understood fact that the sand found at the mouths of rivers on this coast line contain particles of gold—indubitable evidence of more abundant traces elsewhere. In any case, the archæological interest attaching to such discoveries, warrants some further investigations concerning the reality of the allegations made about them.

Extraordinary Relics of a Pre Adamite Race.

Such is the heading of an article that recently appeared in the Maine *Farmer*, from the pen of Samuel Johnson, of Middletown, Connecticut. "Here in Middletown, and on the opposite side of the Connecticut river, in Portland," says the writer, "is found the red sand stone. This rock extends, I think, from Amherst, Mass. to New Jersey. But this particular basin to which I wish to call your attention, is about eight miles in width, and 5,000 feet in depth. On the west side of this basin, the trap rock has been lifted up through the sand stone, and on the east side, there is a granite ridge, a part of the White Mountain range, which is thought also to have come up through the red sand stone, though not at so late a date as the trap on the west. While the granite and the trap were rising, one or both the sand stones were slowly sinking. I say *slowly*, for it was, I think, thousands of years settling down to its present level. On the east bank of the Connecticut are the Portland stone quarries, which have been worked for 150 years. At present, in the three quarries, about 1,000 men are at work, and thirty to forty vessels are employed in carrying the stone to the great markets. Those excavations, which have now reached a depth of 105 feet below the surface of the water in the river, have revealed untold wonders. The stone is said to be full of fossil remains in its lowest depths. I might call it a great *charnel house*, but this is too gloomy a term to apply to it. It is rather God's great Book of Records, which has been here carefully preserved and hermetically sealed up till within the last few years. On the countless leaves of this book are found the records of past ages. They tell us of the climate, of the seasons and of the storms, of the birds and animals; and, more wonderful still, they tell us the men of those ages, show us their implements, and shadow forth something of their customs. They also open to us their graves and show to us their modes of burial, the men lying in one posture and the women in another. These men all had three fingers and a thumb, and four toes. The comparatively more recent of them were six to seven feet high; but, as we unfold the leaves further, and proceed back in the cycles of time to the lower depths of the rocks, we come to a race of giants twelve feet high, with feet twenty-two inches in length. These men wore shoes, and had domestic animals of peculiar structure and great size. The only human instruments so far discovered were made of stone. They had saws and long knives made of slate, and brought, probably from Vermont. This sandstone basin is believed to be of the same geological age as the basin of Paris in France, but the fossil remains are more numerous than those in the Paris basin—more wonderful, and in a better state of preservation. How easy it is to see a thing after it is pointed out to us! Just as it is easy to use and apply Kepler's laws after Kepler has discovered them. These quarries were worked more than one hundred years, and were used for sidewalks and buildings before the fossils were discovered! Now the practical eye can see them almost everywhere. The most indefatigable observer, and the most industrious collector of these facts is Dr. Barrett, of this place, who has spent almost a lifetime in collecting fragmentary evidence, and surmounting difficulties. He is said to have a remarkable knowledge of comparative anatomy, and to be in many respects, a very learned and remarkable man, who has been far in advance of his times. Many years since, the fact of a pre-Adamite race dawned upon him, and he announced it in conversation. Presently, similar discoveries have been made in Europe, and learned men are beginning to admit the fact. Agassiz carries the existence of man on earth back 70,000 years. Dr. Barrett says man trod this valley at least 90,000 years ago, but not our race; the present race is a new and distinct creation.

American Cast-Steel.

The manufacture of American cast steel has, within the last five or six years, assumed a rank and importance among the great manufacturing industries of our country, that its just claims to be considered as an element of national wealth cannot be reasonably ignored, and it should therefore receive its full share of the fostering care of the Government for its support. That we possess all the appliances, and the ability to produce in this country steel of every description, from the lowest grade to the very finest quality imported, made exclusively from American stock, is now an established fact, demonstrated beyond the possibility of dispute, upon testimony from which there can be no appeal, and which we are prepared to furnish in overwhelming variety and quantity. Among the severest tests of the comparative quality of English and American cast steel, it may be stated, that the celebrated fifteen and twenty-inch guns manufactured by Messrs. Knap & Co., at the Fort Pitt Works, are all bored and turned with tools made exclusively from American cast steel. These gentlemen inform us that its strength is so much greater, that much heavier cuts are taken upon large ordnance than any English steel will stand. The sabers which have been furnished to our armies by the great establishment of C. Roby & Co., West Chelmsford, and of the Ames Manufacturing Co., at Chicopee Falls, Mass., and others, are likewise made of Pittsburgh steel, in preference to all imported steel. American cast steel is extensively used in our public and private armories, for the manufacture of bayonets, pistols, carbines, etc. In short, there is no use to which steel can be applied, in which it does not compete successfully as to the quality of the best imported brands.—*Report of Revenue Commission.*

Original Papers.

PREPARED FOR THE JOURNAL OF MINING.

ELI BEAUMONT'S GEOLOGICAL TABLE

OF THE DISTRIBUTION OF USEFUL MINERALS.

Emended and brought down to 1866, by DR. R. P. STEVENS.

MINERALS.	Azoic	Taconic	Silurian	Devonian	Carboniferous	Permian	Triassic	Jurassic } Oolitic }	Cretaceous	Tertiary	Quaternary	Recent
Iron	o	o	o	o	o	o	o	o	o	o	o	o
Copper	o	o	o	o	o	o	o	o	o			
Lead	o	o	o		o	o	o	o	o			
Silver	o	o	o	o	o	o	o	o	o			
Zinc	o	o	o		o		o					
Tin	o		o									o
Gold	o	o	o	?	o	o?	o	o	o	o	o	o
Platinum					?			o			o	o
Bismuth	o					o						
Mercury	o		o		o				o	o		
Cobalt, } Nickel. }	o	o	o		o							
Manganese	o	o	o		o							
Antimony	o	o				o						
Sulphur	o	o	o		o				o	o		o
Coal			o	o	o	o	o	o	o	o		
Petroleum		o	o	o	o	?		o	o	o		o
Salt			o	o	o	o		o			o	

o Indicates the location of mineral.

[WRITTEN FOR THE JOURNAL OF MINING.]

SALT—Number Twelve.

By FRANCIS E ENGELHARDT, Ph. Dr., Professor of Chemistry in St. Francis Xavier's College.

I have previously mentioned that Onondaga county is not only one of the oldest but also at present the most productive of the salt producing localities of the United States. The so-called "reservation" of the State of New York, eight square miles in extent, is leased, I believe, every thirty years. The last lease between the State and the old property owners was renewed in 1859, and in the following year the salt manufacturers of Syracuse, Salina, Geddes and Liverpool, formed the so-called "Salt Company of Onondaga," for the protection of the Onondaga salt interest, by regulating the manufacture of the various varieties of salt required for the market. The State controls the inspection of the salt, and has, for this purpose, appointed a State superintendent, chief engineer, and chief inspector of salt, besides a number of other officers. The State furnishes the brine, pays for the sinking of new wells, provides and keeps in repair the necessary buildings, pumps, steam engines, logs, etc. In return, it levies a duty on the salt which, up to 1846, amounted to six cents on the bushel, which was reduced in that year to one cent per bushel (in consequence, no doubt, of an increased competition in the neighboring States). This tax was formerly a considerable revenue to the State government, as may be seen from the fact that it amounted in the twenty years, from 1830 to 1851, to $2,467,022 net profit; and even now, after reducing the tax to one cent, the State derived, for the year 1865 to 1866, an income of 18,620 dollars therefrom. Since 1862 the United States Government has imposed an internal revenue tax on the salt, which amounted last year to 4.03 cts. on the bushel of manufactured salt. The salt wells of Onondaga* are mostly situated around the southern and eastern shores of the lake of Onondaga, near the City of Syracuse. According to Dr. Beck's view, the brine accumulates in a natural underground basin of red shale, filled up by alternate layers of sand, coarse gravel and loamy soil, which are frequently cemented together into an impermeable rock, the so-called "hard-pan." Dr. Goessmann, in summing up what is at present known of the Onondaga brines and their sources, says, in his "Contribution to the Chemistry of the Mineral Springs," pages 20 to 23.

1. The depressions in the Onondaga Shales are filled, in some localities, to an extent of nearly three to four hundred feet deep, with a diluvial (detritus) deposit varying in size from the coarsest gravel to the finest drift-sand.†

2. The layers of coarse gravel and fine sand alternate without any distinct order or extent.

3. The gravel has frequently formed into a conglomerate mass of great hardness, commonly called hard-pan—an impermeable layer which intersects, more or less efficiently, the various strata of the loose material.

4. A formation of recent origin, consisting of a red loam or loamy sand, covers, frequently to a considerable extent and depth of from 30 to 40 feet, the lower diluvial deposits.

5. The Onondaga red Shale has been struck everywhere, when the boring was continued beneath the brine-bearing drift masses; near the eastern embankment at from 90 to 180 feet;—towards the middle of the valley, between Salina and Geddes at about 382 feet.

6. The brine proper makes its appearance at about 100 feet below the level of the surface.

7. The brine rises by means of boring and tubing to the level of the Lake surface or within it from 10 to 15 feet; the degree of its rise depends apparently on the specific gravity of the brine. The most concentrated brine remains lowest.

8. The yield of a well, independent of the concentration of the brine, depends on the size of the gravel or sand around the lower termination of the tubing.

9. The brine does not increase or decrease in strength during the winter season, when no pumping takes place; its temperature is from 52° to 53° F.

10. The deep wells bear the heavy drafts of brine during the summer season without suffering in strength, while the shallow wells decline.

11. The lowest depth does not, in all cases, guarantee the most concentrated brine.

12. The red Shale apparently bears irregularities of stratification independent of the peculiar form of a basin.

13. The outcrop of the red Shale on the eastern embankment of the lowlands—at Green Point—contains veins of Gypsum interspersed with Specular iron ore.

The occurrence of the Peroxyd of Iron, as pseudomorphs of Chloride of Iron in this local outcrop of the red Shale is deserving of some attention. The peculiar manner in which the Gypsum and that ore present themselves, sometimes in veins alongside of each other, sometimes the latter surrounded and enclosed by the former (besides the resemblance between some of the adjoining Gypsum to the hardened masses of Gypsum separated from its boiling solution in salt water) are facts which seem to point to the existence of some peculiar local disturbance due to subterranean heat. The presence of Serpentine at James street height and the elevation of the localities where casts of Chloride of Sodium have thus far been found, may also bear some relation to the presumed changes which some of the surrounding localities have suffered in regard to their original stratification.

ERRATA.—In No. 11, in the sentence commencing "The use of lime in settling the brine," read "but more frequently chloride of magnesium" instead of "but also more frequently *into* chloride of magnesium;" and the next sentence should read thus: "if more lime be added than can combine with the sulphuric acid of the sulphate of magnesia present in the brine, this excess of lime will also produce a decomposition of the chloride of magnesium *into magnesia* which falls down, and chloride of calcium which remains in solution, and causes the salt if it enter the latter to deliquesce; and on next page, 296, read "a good pan yields daily six tons butter salt, and fourteen to twenty tons of the other varieties *in a week*."

The number of salt wells in operation at the Onondaga reservation during the season, is twelve or thirteen, varying in depth from one hundred and fifty to three hundred and fifty feet. They yield generally a copious flow of brine; in 1850, for instance, the wells

* I am indebted for the most of the following statements, in regard to the wells, brines and the manufacture of salt at Syracuse, to the reports of the State Superintendent to the Legislature of the State of New York, and to the following publications of Chas. A. Goessmann, Ph. Dr., since 1861, Chemist to the Salt Company of Onondaga; (*a*) "Report on the brines of Onondaga," Syracuse, 1862; (*b*) "Report on the manufacture of solar salt," Syracuse, 1864; (*c*) Contributions to the chemistry of the mineral springs," Syracuse, 1866; and (*d*) his various statements in the report of the State Superintendent.

† The alternation of impermeable and loose strata may have some bearing upon the artesian character of the salt springs of Onondaga.

around the Syracuse pump-house were calculated to yield 1,000,000 gallons daily, during the entire season. The brine they supply is pumped up, partly by steam, and partly by water-power derived from the Erie and Oswego canal, into large distributing tanks, at four different localities, Syracuse, Salina, Geddes and Liverpool. These store-reservoirs are elevated considerably above the surrounding plain, on which the salt manufacturing establishments, the "salt blocks" and "solar fields" are situated. From the reservoirs wooden pipes, "logs," conduct the brine to the various establishments. The entire length of these logs is estimated at thirty-five or forty miles.

[WRITTEN FOR THE JOURNAL OF MINING.]

LEAD FIELDS OF THE UPPER MISSISSIPPI—No. Eight.

HOW LEAD ORE IS MINED.

By J. VANCLEVE PHILLIPS, M.E.

LEAD MINES ABOUT BENTON.

The town of Benton is situated on the summit of a ridge, twelve miles east of Galena, and the country is a rolling prairie. The lead ores are worked in a flat opening, cropping out low down on this ridge. We will go down to Galena river, one mile from the town, and one hundred and fifty feet below the summit of this ridge. The river is a clear, swift running stream, twenty feet wide, and one foot deep on the shoals, and is gravelly with rock-bottom. On either side the lead measures rise up in low escarpments, which are the termination of ridges, and are divided by valleys of denudation. The blue limestone—the lower stratum of the lead measures—rises up about twenty feet, and is the bed-rock of this stream. The dip is noticed to be at a small angle each way from the water-course. The bottoms, which are under cultivation, are spread out in places two and three hundred yards wide. There is a small, stunted growth of white and black oak in places bordering the stream—the summits of the ridges, all being prairie. Coming up, the sides of the ridges are flinty, the clay red, and from three to five feet deep. We have now reached the level of what is known to miners as the flint opening, a plane in the lower galena limestone near the upper part of this stratum. Along this line, on the sides of the ridges, and in the valleys, lead ores are first found in the clay, in places cropping out to the grass roots. They are mined by sinking shallow holes, and drifting these together for ores in the clay, which are generally in a bed or stratum, from one to three feet, above the rock. As this ore, in a kind of unstratified vein, is worked towards the rising ground, it commences to have a cap rock shelving over it—a grey, flinty limestone. The ore is in masses, from one pound up to one hundred pounds in weight, each mass being crystallized in cubic form, and surrounded with a layer of yellow, ochery clay, that forms its matrix. As this ore works under this shelving cap rock, it commences to form in east and west, and north and south courses or veins. These cross each other at right angles, and these small veins are always more or less influenced by each other at the point of crossing—sometimes the north and south cutting out the east and west, and leaving that crevice barren for some feet each side; again, the east and west has had the predominating influence, and the north and south, as the miners say, is robbed of its ore. Imagine a system of veins of this kind along the slope of a ridge, twenty feet above the spring branches, working in horizontally, between solid hanging and foot walls of cherty limestone—the walls being from three to six feet apart, and the space filled with sand, clay, ochre and lead ore. At intervals these openings have pillars of rock which support the hanging wall or cap rock; the ore extends in this ridge, in this form, for several hundred feet. As the work progresses, first the ore and debris is carried out by a small wooden railroad, man-power being used to run out and dump the material; further ahead on the rising ground, shafts are sunk, a whim put up, and matrix and ore are hoisted. These veins vary greatly in the amount of ore they carry, in some places being replete with wealth, and again a little string of vagrant ore follows along the course of the vein. In places the openings are narrow, the ore pinches solid between the rock, and has to be blasted out with powder; the pillars of rock which in places are two and three feet wide, again spread out, and are twenty and thirty feet wide, cutting out the opening and ore. The miner, meeting these pillars, is obliged to keep working around them, and they sometimes spread out for hundreds of feet, and cut out the opening and ore entirely in that part of the ridge.

UPPER APPLE RIVER DIGGINGS.

These mines are thirty miles east of Galena. The country has an altitude of 500 feet above the Mississippi river west; the topography is made up of long, swelling valleys and serpentine ridges; the district is prairie and timber; small conic mounds, some six in number, rise like islands out of the sea of prairie in this part of the lead field. These are known as Pages', Woods', Scales', and some other mounds. They are four, and six, and ten miles apart, from two to three hundred feet high, and formed of Niagara limestone—the same age of stratified rock as that over which the great cataract has thundered its mighty volume of water for ages that reach back to the era of the abrasion of the river channels. These mounds are outliers; they mark the original outline of the country. From two to three hundred feet of solid strata have been abraded, eroded by air and water, crumbled by the giant hand of time, and swept in great detrital currents towards the Gulf of Mexico. This district is rich in agricultural resources, the clay being from five to twenty feet deep, and filled with all the elements necessary to produce cereals. The physical features of the country are beautiful in the extreme. Standing upon one of the mounds, the eye takes in a sea of prairie, formed of undulating valley and ridge, which resemble the swells of an ocean. Small spring branches follow the vallies. The painted house of the farmer, little groves of timber, and herds of stock grazing make up the picture. The Illinois Central Railroad crosses this part of the lead field. The little town of Apple River has sprung up, and its well painted houses and churches show a thrifty, enterprising population. Suppose we bore a thousand feet deep from the top of this mound, the succession of strata would be somewhat as follows: Niagara limestone, three hundred feet; lead measures four hundred feet; upper sandstone, one hundred and twenty feet; lower magnesian limestone, two hundred and fifty feet; Potsdam sandstone, one thousand feet. The lead ores in this district are found in east and west vertical or gash veins. Let us go down a small, flat valley, a few hundred yards from the town. Here the limestone is exposed in nearly horizontal strata, the surface being covered with clay, from six inches to one foot deep; shallow excavations are made, piles of rock thrown out, the shafts or pits are from six to ten, and twenty feet deep—this is a lead mine—a hundred tons or upwards of 75 per cent. lead ore having been raised. The ore was spangled through the clay and rock in irregular forms, and then concentrated in an east and west crevice, and was worked down to water and abandoned. Going south about a mile, the works of a mining company are seen. This property was sold in 1864, by Judge Wm. C. Bostwick, of Galena, to a New York mining company, and they have put up some ten or twelve houses, an engine and pumps, and are preparing to test the country for deeper ores. Let us look around—a chimney is built of cut stone, the engine is seen bright and oily, and working with "tireless arm," and the "crystal fountain is coming up"—the shaft being about seventy feet deep; this property consists of two hundred and forty acres. There had been some six or eight east and west lead veins worked on this ground by individual miners, years ago, and large amounts of ore raised. The water level is near the surface in the valleys, and from twenty to fifty feet from "grass" on the ridges. The location selected by this company to pump, is in the head of a valley, where east and west crevices crossed, and a considerable amount of ore had been raised. The idea appears to have been that all that was necessary to get lead ore was to sink a shaft below the water level, where ore had been found in the top of the crevice; and as a necessary consequence, the ore must increase in richness going down. This is not always found to be the case. These veins are what are known in geology as "gash veins," being found in parallel fissures, and limited in depth to the upper galena limestone. The surface outlay here has been such as a mining company would need who have a well-defined vein to work, and expect to sink shafts several hundred feet deep. The geological conditions here are different from what they are on Lake Superior, where copper is found in true veins; and in North Carolina, where the country is formed of granite and slates that stand at high angles of dip, and the copper, silver, lead and quartz lodes cut the strata vertically; or in Colorado, Nevada or California, where the country is formed of primitive rocks, and the quartz lodes, that bear white and yellow metal, owe their origin to causes deep seated in the earth, and evidently carry ores thousands of feet below the surface. The geological conditions in this lead district are of an entirely different character; the lead-bearing limestone is nearly horizontal, the fissures are from fifty to one hundred feet apart, and all bear lead ore. The upper galena limestone is about one hundred feet thick at this mine, and going th and east, is covered with a cap rock fifty feet thick. Below this upper galena limestone, is the lower galena and blue limestone, each one hundred feet thick, and each lead-bearing in other districts, making three hundred feet of lead measures at the engine shaft. The question may be asked, "what would have been the most economical way to develop this ground with mining capital?" The following appears to the writer as the most feasible and practical: in place of putting up so many buildings, and an engine and pump, the first work to be done should have been to have commenced where the former miners left off, (as this ore was principally mined when lead sold for three cents per pound, and is now twelve cents,) and proved the veins ahead, in the upper galena limestone, under the cap rock which forms the upper stratum of the ridges (but a small part of the surface area of this ground has yet been proved,) and prospecting between the crevices, discovered other parallel crevices. In this way, it is evident that ore would have been reached in paying quantities, at much less outlay than has here been made. In this way, the upper galena limestone would have been proved for veins, and as these were followed and exhausted of ores, the system of veins leading to the lower lead measures would have been discovered, and could have been followed. Parties who are going to use capital to mine lead ores, must keep in mind the fact, that they are not mining in California, Cornwall or Colorado, but in a new lead field, where the rocks are but little disturbed, and veins make in tiers or levels, in the lead measures, the character of the veins being due, to some extent, to the geographical position in which the mines are discovered in that particular basin of the lead measures. Almost nine-tenths of the level lead-mining companies started in this lead field, have foundered upon this same rock—ignoring all science as connected with a distribution of the veins, and working upon the principle, that the deeper the shaft was sunk the larger must be the vein. This mining company evidently has a great amount of ore on its lands; but if the question be asked "whether it is working in the most economical way to get it?" I should say "no." Having no interest in the mine whatever, this statement is made for the general benefit of parties interested. The company have worked from thirty to forty mines during the last twelve months, and raised but little ore; and as a necessary consequence, if they do not find it to pay in the end, will abandon the mines, and tell bad tales about the lead country generally. Hoping that the company will give up the costly experiment of prospecting in the lower beds of rock, in this district, not yet proved to contain ore, and go to work where the ore is known to exist, we leave them, and go a little further south. Here is also found other east and west veins that have yielded large amounts of ore, the work having been done by individual miners. The water is so near the surface in this district, that from twenty to fifty feet is the deepest work done on these crevices. The ore is of a very rich and pure character—crystallized in cubes, and shows a strong east and west producing influence. The Illinois Central Railroad Company own some five thousand acres, going south from the Little Apple river mines. The country is prairie, and rich in agricultural resources; and lead measures lie in a favorable position for the district to be underlaid by a net-work of lead veins.

AMERICAN
Journal of Mining.
[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR.

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NEW YORK, SATURDAY, AUGUST 18.

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MINERAL STATISTICS—THE NEW AGENCY.

Secretary McCulloch evidently loves wine, wit and poetry, judging from the fact that J. Ross Browne, who recently presented him with a case of California wines, accompanied by a witty poem, has since been appointed special agent of the United States Treasury Department for the collection of mining statistics—Congress having made an appropriation of $15,000 for that purpose. Against this appointment, however, we have nothing to say. On the contrary we conceive that Mr. Browne is in many respects the very man for the place. He has travelled extensively, and hence has acquired not only liberal views of men and things, but that suavity which neutralizes the disagreeable, prying-into-peoples-business air that almost invariably hangs about such a mission as the one he has assumed. He has written much and well, and hence we may expect his report to be thorough and excellent reading. He has been much in the mining districts, and hence must have gained some degree of knowledge in mining, milling, etc. We presume he knows what he is about, and on the passage to California—he went by the last steamer—will map out the system upon which to operate. Among other statistics important for the country to have will be: the number and extent of alluvial, vein, and other mines, taken up, but not being actively worked, how much has been expended on them, and what are the prospects; the number, extent and value of similar mines actively worked, their yields of ore, of bullion, and the costs of extracting from mine and reduction works; the average earnings in the different districts of miners, millmen, etc., whether working for themselves or for others; the number, capacity, cost of construction, costs and results of processes, etc., in the various reduction works, and whether driven by steam or water; the amounts of foreign and home capital invested in our mines and mills; the number of foreign miners, those naturalized and those born in this country; the number of dividend-declaring mines and those that promise dividends; the gross amount of mineral or metal-bearing territory now being worked; the gross amount taken up but unworked; the gross amount as yet untouched; with accompanying map. Then he might ascertain the amount of precious metals wasted by the various processes, with the quantity of tailings preserved for future working; the amounts of gold, silver, copper, lead, tin (if any), antimony (if saved), coal, petroleum, slate, granite, precious stones, etc., extracted annually; the amounts of mineral and metallic product used in the producing States and Territories, as well as the amounts exported; effects of the various kinds of mining upon the habits, health, morality and intellect of those engaged; with the temperatures of the various mining regions. The work *well* done will be of incalculable value not alone to the mining interest, but to the nation at large. We therefore hope that all miners and mill men—even those of "Washoe," who were once aggrieved at Ross Browne's account of his first visit to Virginia city—will furnish the special agent with correct data for his report, and that he will be so very careful in his collection and statement of facts and figures, as to be willing to swear, to the best of his knowledge and belief, to their accuracy.

METALLIC CURRENCY—GREAT WASTE BY ABRASION.

The question as to whether a specie or an irredeemable paper currency is the most advantageous to the commercial interests of the country is beyond the province of a journal devoted to mining, but it is eminently proper for us to allude to anything that tends to decrease the world's stock of precious metals, and it is an undeniable fact that the use of a gold or silver currency does by the abrasion consequent upon passing the coin from hand to hand very materially affect the supply of those metals. In the case of other merchandise, supposing it to be likely to pass through the possession of many merchants, it would be absurd to cart it from one merchant's warehouse to another. To avoid the unavoidable waste as well as inconvenience merchants use warrants or delivery orders. In a similar way, if the loss on gold by abrasion is really an important matter, the gold ought to be left in its "warehouse," the banker's safe, and the actual use of coin itself should be discouraged—all that is needed being that each holder of a warrant or bank note should feel sure that he can handle his gold when he wishes to do so. In order to exhibit this important matter in a clear light we give the following table of results from two experimental examinations made by the British Government in 1787 and 1798:

12.825 crowns 27.525 half crowns 82.225 shillings 200.925 sixpences	were requisite to make a pound troy instead of	12.4 crowns 24.8 half crowns 62 shillings 124 sixpences	as issued from Mint.

The deficiency in the interval of 11 years amounted in the crowns to 3.281 per cent.; in the half-crowns to 9.9 per cent.; in the shillings to 24.599 per cent.; and in the sixpences to 38.285 per cent. If 38 per cent. of silver is thus lost on each sixpence every eleven years, the amount lost on gold pieces—although of course less on account of smaller circulation—must be something worth calculating. We are not aware that our own Government has ever caused investigations on this subject to be made, but if so, we shall be glad to hear of them from any of our readers.

John Bull's Queer Investment in Pig-Iron.

The English are called "a nation of shop-keepers," which we by no means question; but something has just come to light, proving that they "keep shop" on very singular principles. It appears that at the close of the war in 1815, some 31,000 tons of pig-iron was purchased by the British Admiralty as ballast for ships-of-war, at a cost of 108 shillings per ton. The application of steam power to the Royal Navy, and the consequent ballasting of men-of-war by their engines, released the pigs from duty. They were thrown out upon the dock wharves, and since the year 1860 the dockyard and workshops had been paved, and even walls constructed with them! The best paving and brick walls would have cost £19,577. But the value of the pig iron and cost of laying it, was £172,273—a loss of £152,696, besides the loss of interest on the value of the iron from the time it was laid down. Add to this the fact that, with all this stock on hand, the Admiralty has been purchasing from year to year, cold-blast iron, and we have a most remarkable case of official stupidity in national shop-keeping.

Mineral Collections for the Great Paris Exposition.

Pittsburgh, we are informed by the *Chronicle*, will be fairly represented at the Paris Exhibition. Her iron, coal, glass, petroleum, copper, will all be displayed to advantage. We are also glad to learn by telegram that the collection of minerals from the Pacific coast to be sent to the Paris Exposition is large, and will embrace all the Pacific States and Territories. We trust that Michigan, Missouri, Wisconsin, Illinois, Pennsylvania, and others of our Northern and Middle States, will be equally well represented, and that efforts in the same direction will be made in the Southern States. Gold, silver, copper, iron, lead, tin—every kind of ore and metal in fact, from all parts of the United States, should be well represented. Let us show the world how metalliferously rich we are, and there is but little doubt but that a large influx of foreign capital for investment in our mines, will be the direct result. Statistics of course should accompany the specimens to make them of any practical value.

Wear and Tear of Railways.

As so large a proportion of the iron produced is consumed in making railway bars, it may be interesting to notice some statistics on the "life of a rail," given in a paper recently read by Mr. R. Price Williams before the Institute of Civil Engineers, in England. It appears that while the cost of locomotives has been constantly decreasing, the cost of maintenance of way has increased during the past fourteen years more than 200 per cent. under the increasing exigencies of service. On the Lancashire and Yorkshire line, where the traffic is very heavy, but the speed comparatively low, the average duration of a rail is 7¼ years, but on the Great Northern up line between Potters-bar and Hornsey, where there are heavy ascending gradients, and similar heavy coal and passenger traffic to the Lancashire and Yorkshire, but worked at high speed, the rails last only 3½ years. So that it seems it is "the pace which kills."

How Coloradians like the New Mining Act and the Tax.

At Denver City, July 24th, the Union Territorial convention, after nominating a delegate to Congress, adopted resolutions, among which is the following:

Resolved, That we are opposed to the Julian bill, the Stewart-Conness bill, or any other bill looking to the sale or lease of the mineral lands, as incompatible with a sound national policy in that respect, and unjust and detrimental to the interests of the settlers on those lands, who have discovered and given them their value by improving them, with the tacit consent of the Government.

Resolved, That we protest against the tax of one-half of one per cent. levied on the gross production of bullion in the mining States and Territories, as an oppressive and most impolitic burden imposed upon labor.

From the above it will be seen that the miners were *not* unanimous—as was asserted in Congress—in favor of the Mineral Land bill.

More About Indian Hostilities.

Since our last issue, wherein we reviewed the Indian "situation," later accounts of Indian atrocities have arrived. The treaty recently negotiated at Fort Laramie with these savages, seems to be mere waste paper; but the Indians managed during that conference to purchase large supplies of ammunition in exchange for buffalo robes. The Denver *News* of August 1st states that the effect of this Laramie treaty is that:

"We hear of more manifestations of the warlike propensities of the dear Indians lately "treated" (to powder and lead) at Fort Laramie. Three or four trains for Montana are said to have been attacked lately on the Powder river road."

So much for Indian treaties.

Tunnelling.

We observe that Chicago is advertising for a tunnel with three separate roadways under the Chicago river. A tunnel is also talked of under the Mississippi at St. Louis. We trust that when so much scientific labor is brought to bear on the subject of tunnelling, it will not be long before we see trains passing under the Hudson river to the New Jersey shore.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

The Isthmus Canal.

EDITOR JOURNAL OF MINING:

SIR—In your last number I observe that you end an article, relative to Admiral Davis' report upon "joining the two oceans," that cap the American continent, by saying that "the recent appropriation by Congress of $15,000 towards a survey of the Isthmus of Darien, is the first result of this report." If you refer to the *Congressional Globe*, I think you will find that the appropriation in question was $40,000. W. P. C.

WASHINGTON, D. C., Aug. 13, 1866.

Our correspondent is correct. The fact that an appropriation of $15,000 for the collection of mining statistics was made at the same time, occasioned the slip of memory referred to.

COAL—Number Six.

EDITOR JOURNAL OF MINING:

SIR: Having explained the process of drifting and sloping, it remains for me to say a few words on the subject of sinking shafts. The shape and position of shafts in shallow mines, are matters of minor importance, as the workings of such will not be extensive, and the fresh winning inexpensive—yet they ought to be always in pairs for the rescuing of workmen in case of accident, and for the purpose of rendering an efficient system of ventilation available for the carrying off all the vitiated air from the mine. Generally, the sectional shape of these are square or oblong, but in deep mines, where there is much water issuing from the strata to be expected, and where it is necessary to dam it back, the best sectional shape of the shaft would be that of a circle, whence the surface water and that issuing from the crevices of the rocks can be shut off, and the sides of the shaft secured by stone, wood, or metal walling. The soft strata near the surface, are generally secured in a temporary manner until they reach the solid rock, when a stone wall is built from the rock upwards to the surface. But often quicksands are met with before reaching the rock, and to penetrate them, requires great skill and perseverance. The common method of passing through these is by "piling." Long planks furnished with iron ends are driven down all round the shaft, and then secured by curbs; the miners then continue working, and repeating the "piling" until they reach the rock. Cast-iron cylinders, consisting of segments fitted and bolted together, have been pressed through the sand to the solid rock, and the sand thereupon removed from the interior. Frequently this cylinder is made to sink as the sand is removed from the bottom—this is called, "running curb." All deep shafts have their peculiar difficulties. The prudent manager therefore will always be provided against any that may be anticipated, as it is disastrous to meet them when unprepared. As the passage through the strata to the coal is charged with obnoxious gases, it becomes necessary to ventilate the shaft, as the process of sinking goes on. This is sometimes done by means of air-boxes having an expanded mouth at the top for the reception of the air, but this is very ineffective; the shaft is therefore usually divided by a wooden partition formed of strong beams, and clad with boards, the top of the back part of which is covered. A passage is made thence to the engine chimney, where the air is rarified, and a constant and regular draft is caused to pass down to the men, and to carry off the vitiated air from the bottom of the back shaft, through the chimney into the expanse above. The hacking, wedging and blasting are so familiar as to need no remarks; but the improvements that may be made in working, are very great. The holes may be drilled by machinery, the blasting done even under water, by means of nitro-glycerine, and the miners may remain with safety in the bottom while blasting, protected by the iron house. The machinery and preparatory measures for completing deep shafts, are ever varying, and what they will arrive at is beyond comprehension. The British calculate upon going deep down into the bowels of the earth, for the precious "black diamond;" whether they will ever succeed in reaching the contemplated depth of 4,000 feet, remains a serious question. After seeing the Hartley beam give way, I am at a loss to conceive how such immense quantities of water as will be found at that depth can be brought to the surface. They may contemplate having a series of engines in the shaft. This will, however, increase the heat in the mines, while even now in the Sunderland mines, which are only 1,800 feet below the surface, the heat is so great as to induce the men to work almost naked. The required power to raise the coal is another important consideration, while the length of time, and the expense of sinking, would lead capitalists to lay down railways to more profitable beds of coal elsewhere.

SHAWMUT, ELK CO., PA. A MINER.

MINING COMPANY STATEMENTS.

EXCELSIOR MINING COMPANY, COLORADO.

A statement made by the Treasurer, just returned from Colorado, contains the following paragraph: "We have the best, or certainly as good as any show in the mountains for lodes or veins of ore. We have all that we desire, and better than simple money can obtain of management on the spot; and we have in addition every possible evidence of inexhaustible ores and proper management in the process to save the gold."

DIVIDENDS

A telegram from San Francisco, August 13th, gives the following dividends: Yellow Jacket $50 per share, payable August 15th; Hale and Norcross, $75 for July; Bank of California, one per cent. on its capital stock of $5,000,000, for July; Imperial Mining Company, $6 per share. We learn also that a dividend has been declared by the Benis Heights Petroleum Company of 5 per cent. for June and July.

MEETINGS.

Great Western Consolidated Oil, election of Directors, noon, August 30, at Philadelphia; Benjamin Oil Company, noon, August 25, 71 Broadway; Humboldt Gold Company, election of Trustees, noon, August 23, 25 Park Row.

MARKET REVIEW.

FRIDAY EVENING.

Gold—Which opened this morning at 151 closed at 2 P.M. at 150⅞. The loan market is easy at 4@5 per cent., and to first-class houses at 3 per cent.; for commercial discounts, 5 to 7 per cent. There is more commercial paper offering at three and six months dates. The foreign exchange market is dull; commercial bills at sixty days on London, 106@107; bankers', 107¼@108; do. at short sight, 108⅜@109¼; Paris at sixty days, 5.30@5.21¼; Hamburg, 35½@36⅛. The Bank of England has reduced its rate of discount to 8 per cent., and the Bank of Prussia to 5 per cent. Government stocks are strong and advancing; other stocks dull. In mining stocks we notice a decline in Consolidated Gregory, $0.50 to $1.00; an advance in Downieville Gold from $1.12 to $1.26, also a slight advance in Walkill Lead.

The exports of and gold silver from this city from Jan. 1st to August 11, are	$52,256,438	
Increase over last year		$33,265,808
The deliveries here from California	24,283,721	
Increase over last year		13,542,870
The customs receipts here	83,983,466	
Increase over last year		31,615,158

Iron.—The demand for Pig iron has been small for both Domestic and Foreign. There is no change in price. Sales of 200 tons Gartsherrie, ex ship, at $47; American No. 1 is scarce, and held at $48@$49. The English advices still show great depression. By last advices from Glasgow the price there is 52s., cash.

Copper—Is in somewhat better demand. The Ingot in stock is not more than equal to a three month's supply. The sales comprise 250,000 lbs. Cliff and Detroit at 30c.; a forced sale of 50,000 lbs. Portage Lake at 29½c.; 50,000 do. at 30½c., and 80,000 lbs. Baltimore in two lots at 30c. The last kind is scarce.

Messrs. Vivian & Younger, of Cornwall, write, July 27, to the London *Mining Journal*:

We are again able to advise considerable transactions. In English copper the sales have not been heavy, but there has been more general inquiry, especially for manufactured, and to some extent for markets which have taken nothing from us for some time past. We gather from this that the low price is attracting attention, and when money becomes easier will induce dealers and others interested to give out orders freely, especially as stocks in their hands must be much below the average. The English smelters have bought this week—first, 500 tons fine copper in ore, at 12s. 6d., and since 1,000 tons of fine copper in ore and regulus at 14s. per unit. The French manufacturers have been our largest buyers for a considerable time back, and this week have purchased altogether about 1,500 tons of Chili bars and Chili refined ingots, the former at £73 10s. to £74 per ton. The mail from Chili, now due, is looked forward to with considerable interest, since it will bring replies to quotations from this side of 15s. and 15s. 3d. per unit for ore and regulus, and will also respond to the first indications of the monetary crisis here.

Lead—Has very slightly advanced, with a better demand. Sales of 40 tons, including 250 tons best English and other foreign at 7c. per lb. Bar, Sheet and Pipe in moderate request at $10.50 to $10.70 per 100 lbs.

Tin—Is firm, but quiet. The sales include 800 slabs Straits at 20c., gold. English very scarce and nominal at 21c., gold. Tin Plates are dull, but without change of price.

Spelter.—There has been some inquiry but no large business done. Prices are without change. We notice sales in Boston of 30 to 40 tons Silesian at $10.50, and here 20 to 25 tons in lots at $9.95@$10.25, and Lehigh 15 tons at $12.

Zinc.—There is a better demand for lots from store, which are selling at 9@9¼c., gold, for Foreign, and 13½c., currency, for Lehigh.

Salt.—The arrivals of Liverpool are limited and stock small; prices consequently are firm, but without much business. West India in good supply at easier prices. Liverpool ground $1.80@$1.90 per sack; Worthington, $2.80@$2.90; Turks' Island 50c. per bushel.

Petroleum.—The market had somewhat improved yesterday, but to-day is dull, and prices somewhat heavy. Crude 40 @ 47 gr., in bulk 19 @ 20c, in barrels 26c. Refined, 110 deg. test, light straw, 37 @ 38c.; light straw to white 39 a 40c.; prime light straw to white 41 to 42c.; standard white 44c.; prime white 45c.; free oil 57 a 61c.

THE COAL TRADE.

FRIDAY EVENING.

There is but little doing in foreign coal, and no supply of foreign house coal. In domestic the quotations are not reduced, though the tendency is downward, particularly for the smaller sizes. On the 15th inst. 40 500 tons Pittston coal were sold, deliverable at Rondout, N. Y. The prices are as follows, as compared with sales on the 25th ult.:

Tons. Aug. 15, 1866.		Tons. July 25, 1866.	
3,500 Lump	$6 50 @$6 62½	9,000 Lump	$6 37½@$6 50
12,000 Steamb't	6 62½@ ——	5,000 Steamboat	6 50 @ 6 70
9,000 Grate	6 37½@ 6 50	5,000 Grate	6 62½@ 6 75
6,000 Egg	6 50 @ 6 87½	3,000 Egg	6 75 @ 6 80
8,000 Stove	6 50 @ 6 62½	4,000 Stove	7 20 @ 7 30
2,000 Chestnut	5 12½@ ——	3,000 Chestnut	5 50 @ 5 55

It will be seen that there is a small advance on steamboat coal and a decline on smaller sizes, particularly on chestnut. The freight charge to this city is 70 cents per ton.

The coal trade throughout the world appears to be uniformly steadily increasing. Although in Britain the iron works are almost at a stand-still, the extra demand for steam and gas coal more than make up the deficiency. We extract the following from the *Colliery Guardian*:

From the statistics given below it will be seen what relation the South Wales coal-field bears in comparison to the others of Great Britain in exports to foreign countries:

	Tons.
The Northern comprises the coal shipped at Newcastle, Shields, Blythe, Amble, Sunderland, Seaham, Hartlepool, Stockton, Middlesbro', Whitehaven and Maryport	3,799,542
The Yorkshire comprises the coal shipped at Hull, Grimsby and Goole	304,727
The Lancashire, coal shipped at Liverpool, etc	586,733
The Western comprises the coal shipped at Bristol, Cardiff, Swansea, Newport, Llanelly, Port Talbot, Neath, and St. David's	2,297,234
The Scotch comprise the coal shipped at Glasgow, Port Glasgow, Greenock, Grangemouth, Alloa, Borrowstoness, Troon, Ardrossan and Inverkeithing	541,105
Total exports fron Great Britain	7,529,341

In Australia, the directors of the Agricultural Company state that during the year they sold 92,409 tons of large and 19,618 tons of small coals, which cost £38,343 0s. 6d., and sold for £43,357 1s. 7d., showing a profit of £5,014 1s. 1d. They had increased their facilities for trade, and up to Feb 12 had already secured trade to the extent of between 60,000 and 70,000 tons, and they have good reason to expect that the sales will exceed those of last year. It is admitted by all the coal companies that the present price of coal is too low, and attempts have recently been made to bring about an agreement amongst us with a view to raising it. As yet, however, nothing has come of it, and I have no great hopes that any rise will take place, at all events for the present; indeed, I believe that the only thing which will produce an improvement in prices is the expansion of our foreign trade to such an extent as to bring the demand for coal more on a par with our ability to supply.

In New Zealand coal has been found in immense quantities widely distributed all over the colony. As yet the absence of cheap means of transit, the dearness of labor, and want of capital, have prevented any extensive development of the coal fields of the colony; but it cannot be doubted that these drawbacks will decrease with the progress of settlement and the increase of population, and the coal deposits of New Zealand will prove a source of national wealth.—*Lyttleton Times.*

Coal Transported on the Delaware and Hudson Canal.

	For week end'g Aug 11.	For the season.
Delaware and Hudson Canal Co.	31,119	741,062
Pennsylvania Coal Co.	824	13,067
Total tons	31,943	754,129

For same period last year :		
Delaware and Hudson Canal Co	15,290	422,402
Pennsylvania Coal Co	578	19,715
Total tons	14,868	442,117

Broad Top Coal Trade—Huntingdon and Broad Top Railroad.

Shipped for week ending August 11th, 1866	5,247 tons
Amount shipped previously this year, since January 1st, 1866	159,117 "
Total amount " " " " "	164,364 "
Amount shipped to same date last year	170,013 "
Decrease	5,649 "

Pennsylvania Coal Company.

By railroad, week ending Aug. 11th, 1866, 17,921 04	
By railroad previously	147,567 14
Total	165,498 18 tons.
By canal, week ending Aug. 11th, 1866	824 05
By canal, previously	12,243 13
Total	13,067 18 tons.
" by canal and railroad	178,566 16 "
" to same date 1865	321,314 07 "
Decrease	142,747 11-20 "

Pennsylvania Coal Company.

Shipments of Pittstown Coal by Pennsylvania Coal Co., were as follows for week ending August 11, 1866 ..... 18,756 tons

Previously, 1866	159,811
Total	178,567
To same date 1865	321,314
Decrease	142,747

Prices of Coal by the Cargo.

At New York, August 11, 1866.

Schuylkill Red Ash by Boat Load	$7 75@	$8 00
" Chestnut, " "	5 50	6 00
" White Ash Lump	7 00	7 25
" Steamboat	7 00	7 25
" Broken	7 00	7 25
" Egg	7 75	8
" Stove	7 75	8
" Chestnut	5 50	6 00
Lehigh White Ash Lump	7 75	8
" Steamboat	7 75	8
" Broken	7 75	8
" Egg	7 75	8
" Stove	7 75	8
" Chestnut	7 00	

Scranton Coal at Elizabethport.

Lump	$6 70@	— —
Steamer	1 80	— —
Grate	7 00	— —
Egg	7 00	— —
Stove	7 50	— —
Chestnut	5 75	— —

Lehigh Coal at Elizabethport.

Lump	$8 00@	— —
Steamboat and Broken	7 75	— —
Egg and Stove	8 00	— —
Chestnut	7 00	7 25

At Philadelphia, August 15, 1866.

Schuylkill Red Ash Prepared	$6 00@	$6 25
" Chestnut	4 25	.. ..
" White Ash Lump and Steamboat	5 75	6 00
" Broken	6 00	.. ..
" Egg and Stove	6 00	.. ..
" Chestnut	4 50	.. ..
Locust Mt. Lump, Steamboat	6 00	.. ..
" Broken	6 00	.. ..
" Prepared	6 00	6 25
" Chestnut	4 50	.. ..
Lorberry Coal	6 25	.. ..
Franklin, (Lykens Valley)	6 50	.. ..
Lehigh Lump, Steamboat and Broken	..	.. ..
" Prepared	..	.. ..
" Chestnut	..	.. ..
Broad Top	5 75	.. ..

George's Creek and Cumberland Coal.

Run of mine, f. o. b. at Locust Point	$5 75@	.. ..
At Georgetown	5 50	.. ..

At Baltimore, August 14, 1866.

Wilkesbarre & Pittston W A., wholesale	$7 50@	$7 75
" " " retail	8 50	8 75
Lykens Valley & Sunbury R A., wholesale	7 50	7 75
" " " retail	8 50	8 75

Prices for Pittston Coal at Newburgh.

Lump, per ton of 2240 lbs	$6 75 .. ..
Steamer, " " "	6 85 .. ..
Grate " " "	6 90 .. ..
Egg " " "	7 00 .. ..
Stove " " "	7 25 .. ..
Chesnut " " "	6 00 .. ..

70 cents per ton additional for delivery at N. York.

Coal Freights.

Freights from Newburgh.

Stamford	$1 60@	.. ..	Greenbush	$ 55@	.. ..
Norwalk	1 60	.. ..	Coeymans	50	.. ..
Bridgeport	1 60	.. ..	Coxsackie	45	.. ..
New Haven	1 60	.. ..	Stuyvesant	45	.. ..
New London	1 75	.. ..	Hudson	40	.. ..
Norwich	1 90	.. ..	Catskill	40	.. ..
Mystic	1 75	.. ..	Saugerties	40	.. ..
Stonington	1 75	.. ..	Barrytown	40	.. ..
Bristol	1 95	.. ..	Rhinebeck	30	.. ..
Newport	1 95	.. ..	Poughkeepsie	25	.. ..
Fall River	1 95	.. ..	Fishkill Landing	20	.. ..
Providence	2 00	.. ..	Cold Spring	30	.. ..
Dighton	2 00	.. ..	West Point	30	.. ..
Warren	2 00	.. ..	Peekskill	40	.. ..
Pawtucket	2 15	.. ..	Haverstraw	45	.. ..
Boston	2 50	.. ..	Sing Sing	50	.. ..
Troy	60	.. ..	Nyack	50	.. ..
West Troy	60	.. ..	Tarrytown	50	.. ..
Albany	55	.. ..	Yonkers	55	.. ..
New York	70	.. ..			

Freights from Georgetown or Alexandria.

To Philadelphia	$2 00	— —	Boston	3 25	— —
New York	2 75	— —			

From Baltimore.

To Philadelphia	$1 75@	— —	Boston	3 25@	— —
New York	2 75	— —			

Freights from Elizabethport.

New York	$ 70@	— —	Portland	2 00@	2 10
Fall River	1 80	— —	Newburyport	2 30	— —
Newport	1 80	— —	New London	1 75	— —
Boston	2 00	— —	Pawtucket	2 00	— —
Norwich	1 85	— —	Taunton	1 80	— —
Providence	1 85	— —	New Haven	1 30	— —
Norwalk	1 30	— —	Portsmouth	2 25	— —
Middletown	1 75	— —	New Bedford	1 90	— —
Hudson	1 10	— —	Bridgeport	1 30	— —
Lynn	2 35	— —	Hartford	2 00	— —
Salem	2 00	2 10	Albany	1 15	— —

From Port Richmond, Philadelphia.

Albany (& towing)	$1 65@	— —	Neponsett	$2 75@	— —
Alexandria, Va	1 55	— —	Newark	— —	— —
Bangor	3 00	— —	New Bedford	2 25	— —
Bath	3 00	— —	Newburyport	— —	— —
Bedford	— —	— —	New Haven	2 25	— —
Belfast	2 87½	— —	New London	2 25	— —
Boston	2 45	2 50	Newport	2 25	— —
Bridgeport	2 30	— —	Newport, R. I	2 50	— —
Cambridgeport	3 12	— —	New York	1 70	1 75
Charlestown	3 00	— —	Norfolk	1 50	— —
Chelsea	3 00	— —	Norwalk	2 25	— —
Commercial Point	— —	— —	Norwich	2 50	— —
Cohasset Narrows	— —	— —	Parkshell	— —	— —
Davenport	— —	— —	Pawtucket, & tow'g	2 50	— —
Dighton	— —	— —	Portland	2 75	— —
Dorchester Point	— —	— —	Portsmouth, N. H.	2 75	— —
East Greenwich	— —	— —	Providence	2 25	— —
Fall River	2 25	— —	Poughkeepsie, & tow	1 65	— —
Fredericksburg	1 80	— —	Quincy Point	3 00	— —
Gardner	— —	— —	Richmond	1 90	— —
Georgetown	— —	— —	Rockport	— —	— —
Gloucester	— —	— —	Roxbury	3 00	— —
Hartford	— —	— —	Saco	3 40	— —
Hudson	1 60	— —	St. Johns (in gold)	2 00	— —
Hingham and dis	2 75	— —	Salem	2 50	— —
Kennebrook Point	— —	— —	Salisbury	3 10	— —
Lynn, and disc'ge	2 75	— —	Stamford	— —	— —
Malden	— —	— —	Troy	1 95	— —
Marble Head	— —	— —	Washington, D. C.	1 60	— —
Medford	3 55	— —	West Chester	— —	— —
Mystic	— —	— —	Weymouth	— —	— —
Nantucket	3 00	— —	Yarmouth	— —	— —

The Pottsville *Miner's Journal* of August 11th, says : The trade sums up this week as follows, compared with last year :

	1865.		1866.		
	WEEK.	TOTAL.	WEEK.	TOTAL.	NC. DEC.
P. & R. R. R.	70,232	1,597,405	96 65	2,354,680	757,275
Schuyl. Can	81,649	308,624	36,391	779,877	381,254
L. Val. R. R.	88,576	779,985	46,85[illegible]	1,122,130	342,151
Lehigh Can	18,984	349,451	34,44[illegible]	496,46[illegible]	147,013
Scranton Sth.	672	466,115	22,70[illegible]	615,44[illegible]	149,330
" North	371	131,629	9,300	244,17[illegible]	112,567
Penn. C. C.					
By R. Road	7,866	295,120	17,324	147,56[illegible]	1147,561
By Canal	588	18,664	591	12,244	1 6,220
Del & Hudson	15,490	408,112	36,285	709,943	301,831
Wy'ng South		16,277		218,801	202,524
" North				26,746	26,746
Shamokin	13,874	220,601	16,076	325,738	105,129
Treverton	732	14,165	1,320	31,979	17,814
Short Mt		13,199		44,546	31,341
Franklin		18,360		32,747	14,387
Broadtop	8,934	162,473	5,434	159,117	d3,356
	207,192	4,890,180	323,482	7,321,210	
			207,192	4,890,180	
			116,290	2,431,030	

The increase in the consumption of coal is extraordinary, and shows that the productive industry of the country is fully occupied.

Although the tolls, etc., were advanced twenty-five cents on Monday last, we believe there has been no advance in the price of coal on board vessels at the different shipping ports.

The freights to the east are a shade lower than they were last month, which about neutralizes the advance in tolls ; and many of the coal operators have taken twenty-five cents a ton less this month from the higher prices of July, which enables the dealers below to sell at last month's prices, notwithstanding the advance in tolls. We are glad that the trade continues regular, and prudence on the part of the employers and employed, may keep it regular for the balance of the season.

"Some of the oldest coal shippers avow the belief that coal will sell lower in August than it has sold in July, notwithstanding the advance in tolls, unless there shall be a material stopping of the mines by reason of strikes, turnouts, etc."

We copy the above from the Philadelphia *Press* of yesterday. The "oldest coal shippers" are mistaken. Coal will be sold as low in August, under the advance of only twenty-five cents a ton in tolls, etc., but will not be sold lower in market than in July, simply because it cannot be produced lower, except at a loss, with the present rates of wages, and the wages cannot be reduced without a stoppage, and a stoppage would rather enhance then reduce the prices of coal.

FOREIGN MARKET REVIEW.

Weekly Metal Report.

Nos. 1 and 2 East India avenue, Leadenhall street, }
London, E. C., August 3d, 1866. }

There has been an improved demand for some kinds of metals, and a slight advance in price, but others have experienced a decline, for the general condition of the market is unsatisfactory. The non reduction of the bank-rate has had a very bad effect.

IRON.—Welsh and Staffordshire continue extremely dull ; nearly all the manufacturers are short of orders, and there seems but poor prospects of speedy revival. Scotch pig-iron continues lifeless, closing at 52s. cash.

COPPER.—A decided improvement has taken place both in English and foreign. The former is not obtainable under smelters' quotations. Business has been done in Burra from £82 to £84 10s., and in Wallaroo from £81 10s. to £84 cash ; Chili bars, £74 10s. ; Ores Regulus, 14s.

TIN PLATES.—Are in good demand at full prices.

LEAD.—A good business reported, prices tending in seller's favor.

VON DADELSZEN AND NORTH, London.

Oil Trade Circular.

LONDON, August 3d, 1866

This week the market has experienced a decieed change, the demand for nearly all products being good, and the prices offered in advance of those of last week.

REFINED PETROLEUM—From 2s. to 2. 2d. per gallon.

CRUDE.—£16 per ton.

SPIRIT.—The demand has been good, and a fair business done.

REFINED BURNING (Coal Oil).—The enquiry steadily increasing, and better offers are being made, but in most cases refused by sellers

ONCE RUN.—£12 to £12 10s. per ton in London.

CRUDE.—£8.

GREASE.—£5 to £16 per ton.

PARAFFIN WAX.—6d. to 1s. per lb.

PARAFFIN SCALES.—2d. to 4½d. per lb.

STRANGE BROTHERS & Co., Mold and London

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

COPPER—Ingot	Lake Superior, ℔ lb., cash	.. 30	.. 31
	Baltimore	.. 30	.. 31
	Pig Chili	.. ..	.. ..
	Bolts	.. 43	.. ..
	Braziers	.. 42	.. 43
	Sheathing	.. 45	.. ..
	Yellow metal	.. 33	.. ..
IRON—Pig	No. 1 Scotch, ℔ ton	47 00	50 00
	No. 1 American	47 00	49 00
	No. 2 "	45 00	.. ..
	No. 2 Charcoal	.. ..	.. ..
Bar	Swedish, ordinary sizes	170 00	.. ..
	Amer. and Eng refined	125 00	145 00
	" " common	115 00	120 00
	Rails, American currency	.. ..	.. ..
	" English gold	.. ..	.. ..
	Horse shoe iron	150 00	160 00
	Rods 5-8@3-16rd. and sq	130 50	185 00
	Band	155 00	.. ..
	Nail rods, 5-8 and 3-16	122 50	185 00
	Hoops	160 00	225 00
	Sheets, Russian, ℔ lb	.. 28	.. 30
	" English "	.. 6¼	.. 9
	" American "	.. 25	.. 25¼
	Boiler Plates, English	.. ..	.. ..
	" American	.. ..	.. ..
STEEL	Best cast in bars, war	.. 26	.. ..
	Best sheet cast, "	.. 26	.. ..
	Best cast circular saw plates 46 in	.. 32	.. ..
	Double shear steel, war	.. 26	.. ..
	Single " "	.. 23	.. ..
	Montague & Co. C. S., in bars	.. 23	.. ..
	Round machinery cast	.. 17	.. ..
	Best German	.. 17	.. ..
	Government German	.. 14	.. ..
	Eagle German	.. 16	.. ..
	(L.) Blister, war	.. 22	.. ..
	W. Jessop & Sons, blister, war	.. 20	.. ..
	Double refined	.. 28	.. ..
	Stone Axe shapes	.. 28	.. ..
	Common blister	.. 16	.. ..
	2d quality sheet	.. 23	.. ..
	3d quality sheet	.. 20	.. ..
LEAD	American, per 100 lbs	.. ..	.. ..
	German, Gold	6 75	7 00
	Spanish, "	6 75	7 00
	English, "	6 75	7 12
	Bar, per 100 lbs	10 50	.. ..
	Pipe and sheet	10 70	.. ..
TIN	Banca Gov., per 100 lbs, gold	20	20½
	Straits	20¾	19½
	English	20	21
TIN PLATES	IC 10-14 prime charcoal	15 50	.. ..
	IX 10-14 " "	18 50	.. ..
	IC 12-12 " "	16 00	.. ..
	IX 12 12 " "	19 00	.. ..
	IC 14-20 " "	16 50	.. ..
	IX 14-20 " "	19 50	.. ..
	IC 14-20 Roofing ch. 1st	14 75	.. ..
	IC 14-20 " " 2d	13 75	.. ..
	IC 14-20 " Coke	12 25	.. ..
	IC 10 14 Coke	12 00	14 50
SPELTER	Lehigh, per lb., currency	.. 12	.. 12½
	Foreign " gold	.. 9¾	.. 10¼
ZINC	Mussulman & Amer	.. 13½	.. 14
SOLDER	No. 1	.. 24	.. ..
	No. 2	.. 22	.. ..
QUICKSILVER		.. 90	1 10

LONDON METAL MARKET.

LONDON, Aug. 3, 1866.

		£.	s.	d.		£.	s.	d.
COPPER	Best selected, per ton	84	0	0	@	..	..	..
	Tough Cake & Tile, per ton	81	0	0		..	..	..
	Burra Burra " "	85	0	0		..	..	..
	Copper wire, per lb	0	0	11½		..	..	..
	" tubes, " "	0	0	12		..	..	..
	Sheathing & Bolts, per ton	86	0	0		..	..	..
	Bottoms, " "	91	0	0		..	..	..
	Old (Exchange)	72	0	0		..	..	..
IRON	Bars Welsh in London	7	0	0		7	5	0
	Do. to arrive	7	0	0		7	5	0
	Nail rods	8	0	0		9	5	0
	Do. Stafford in London	8	10	0		8	17	0
	Bars " "	8	10	0		10	0	0
	Hoops " "	9	10	0		10	10	0
	Sheets, single	10	0	0		11	0	0
	Pig No. 1 in Wales	4	5	0		4	10	0
	Refined Metal, do	4	0	0		5	0	0
	Bars Common do	6	5	0		6	10	0
	Do. Mer h. Type or Tees	7	10	0		..	..	..
	Do. Railway in Wales	6	5	0		6	10	0
	Do. Swede in London	11	0	0		12	0	0
	To arrive	11	10	0		..	..	..
	Pig No. 1 in Clyde	2	12	3		2	17	3
	Do. f. o. b. Tyne or Tees	2	9	6		..	..	..
	Do. Nos. 3, 4, f. o. b. Do	2	6	6		2	7	0
	Indian Charcoal Pigs, in Lond.	7	0	0		7	10	0
	Railway Chairs	5	10	0		5	15	0
	Do. Spikes	11	0	0		12	0	0
LEAD	English Pig Common	19	10	0		..	..	..
	Do. ordinary soft	20	0	0		..	..	..
	Do. (W. B.)	22	10	0		..	..	..
	Do. Sheet	21	10	0		21	15	0
	Do. Red Lead	23	10	0		24	0	0
	Do. White	27	0	0		30	0	0
	Do. Patent Shot	23	15	0		24	0	0
	Spanish	19	5	0		..	..	..
STEEL	Swedish in kegs, rolled, p ton	13	0	0		14	0	0
	Do. hammered	15	0	0		16	0	0
	Do. in faggots	16	0	0		16	10	0
	English Spring	19	0	0		23	0	0
QUICKSILVER	Per bottle	7	0	0		..	..	..
SPELTER	Foreign, per ton	19	10	0		..	..	..
	To arrive " "	19	10	0		..	..	..
ZINC	In Sheets	30	0	0		..	..	..
TIN	English Blocks	85	0	0		..	..	..
	Do. bars in barrels	86	0	0		..	..	..
	Do. refined	88	0	0		..	..	..
	Banca	80	0	0		..	..	..
	Straits	76	0	0		..	..	..
TIN PLATES	IC charcoal, 1st qu., per box	1	10	0		..	..	..
	IX Do., 1st quality "	1	16	0		..	..	..
	IC Do., 2d quality "	1	8	0		..	..	..
	IX Do., 2d quality "	1	14	0		..	..	..

IC Coke	1	4	0	.. .. ..	
IX Do.	1	10	0	.. .. ..	
Canada Plates, per ton	13	10	0	.. .. ..	
In London ; 20s. less at the works.					
YELLOW METAL—Sheathing, p. lb.	0	0	8¼	.. .. ..	
Sheets, per lb.	0	0	8¾	.. .. ..	

* At the works, 1s./@1s. 6d. less.

SALES OF ORES IN ENGLAND.

Lead Ores.

SOLD AT LIVERPOOL, EX KEUNA, BY MR. JAMES LEWIS.

DATE.	MINES.	TONS.	AMOUNT.	PURCHASERS.
July 20	Alamillos	48	£12 2 0	Sims, Willyams & Co
—	do	49	12 3 0	do do
—	do	49	12 3 0	do do
26	Glan Alun	15	11 4 6	Walker, Parker & Co
—	Pant Du	20	10 11 6	do do
—	Hendre Ucha	6	11 11 6	do do
—	North Henblas	10	10 2 6	do do
—	Summer Hill	3	11 2 6	A. Eyton.
—	Mount Pleasant	6	11 5 6	do do
—	Pyfugwm	20	10 16 6	do do
	Summer Hill	2	14 5 6	do do
	Mount Pleasant	4	14 8 0	Walker, Parker & Co.
	Central Minera	14½	11 15 0	J. Hughes.
—	do do	3	5 15 0	do do

Black Tin.

Date.	Mines.	Ts.	c.	q.	lbs.	p.p.t.	Amount
July 20	Great Wh. Vor	70	7	3	0	..	£3363 9 10
21	Wheal Uny	9	14	2	9	..	412 13 6
—	Penhalls	7	7	2	4	..	339 6 7

Copper Ores.

Sampled July 4, and sold at Swansea July 24.

Total Produce.

MINES.	TONS.	PRICE.		MINES.	TONS.	PRICE.	
California Ore	575	£5[illegible]	2 0	Bottoms Slag	15	£28	5 0
Moonta	487	80½	15 0	Calcined Ore	2	4	1 0
Copper Ore	400	11[illegible]	0 0	Wallaroo Ore	165	814	14 6
Calcined Ore	144	475	4 0	Berehaven	225	1383	15 0
Coarse Metal	40	653	0 0	Cape Ore	29	509	19 6
Calcined Metal	8	131	12 0				

Companies by whom the Ores were Purchased.

NAMES.	TONS.		AMOUNT.
Copper Miners' Company	130	.....	736 7 9
Freeman & Co.	145½	.....	1.362 18 0
Greenfell & Sons	130	.....	1.756 10 0
Sims, Willyams & Co	131	.....	1.855 13 0
Vivian & Sons	143	.....	2.375 8 0
Williams, Foster & Co	157½	.....	2.082 12 0
Brit. & For. Copper Co	200	.....	650 0 0
Charles Lambert	347	.....	2.351 7 3
Ravenhead Copper Co	144	.....	2.361 15 0
Sweetland, Tuttle & Co	124	.....	1.563 12 0
Penclawdd Copper Company	426	.....	1.649 5 0
Total	2.078	....	£18.675 8 0

Totals and Averages.

	21 CWTS.	PRODUCE.	PRICE.	AVER.
Whole sale	2078	133¼	£8 19 9	£88 1 0

SAN FRANCISCO STOCK MARKET.

LATEST BY MAIL.

NAME.	FRIDAY, July 6.		Sales for week Ending July 7.	
	Open'g	*Clos'g*	*Shares.*	*Amount.*
Sierra Nevada	$ 2	$ 2	100	$ 176 00
Imperial	108	107½	222	23.022 00
Gould & Curry	.....	.....	3	2.105 00
Chollar—Potosi	190	190	246	48.436 00
Yellow Jacket	740	675	128	93.839 00
Bullion	61	55	210	12.965 00
Crown Point	.....	.....	3	2.430 00
Belcher	187½	181	60	11.205 00
Overman	65	62½	1558	81.449 00
Ophir	252½	225	165	37.068 00
Hale & Norcross	.....	.....	....	.....
Exchequer	6	6	5	30 00
Savage	900	900	19	17.192 00
Empire Mill	.....	.....	1	125 00
Alpha	.....	.....	....	.....
Lady Bryan	.....	2¾	170	346 00
Daney	.....	.....	....	.....
Confidence	55	57½	408	27.582 00
Baltimore Amer	.....	.....	....	.....
De Soto	.....	.....	....	.....
Kentucky Cop. Co	.....	.....	....	.....
Golden Rule	.....	.....	....	.....

LATEST BY TELEGRAPH.

SAN FRANCISCO, Aug. 15.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	725	Crown Point	900
Savage	1200	Yellow Jacket	650
Chollar-Potasi	175	Belcher	125
Ophir	200	Alpha	90
Hale and Norcross	1650	Imperial per share	90

Hematite Ores.

From a paper read before the Manchester Geological Society, it appears that there were produced in the Ulverstone district in England, in 1864 691,421 tons hematite ore, which quantity is gradually increasing. It is found usually overlying the limestone with limestone again overlying it. The President remarked that the great deposit at Lendale Moor, which had been worked he believed for centuries, was really a valley excavated from limestone and then filled with iron ore. Some years since he was shown a good specimen of the *Sigillaria vascularis* displaying good internal structure and external characters, all of which have been converted into peroxide of iron, which caused him to believe that these beds of hematite iron ore were formed during the deposition of our coal measures. The origin of iron ores was now, he said, generally attributed to volcanoes. Some years ago a rich bed of hematite was found in the neighborhood of Mount Vesuvius. It came out of the volcano as a chloride of iron, and was immediately converted into a peroxide of iron. The generally received opinion now is that erosions had been made in the limestone during the carboniferous epoch, and afterwards filled with iron before the permian sandstone had been deposited over it.

UNITED STATES SECURITIES.

Reported for the Journal of Mining by Messrs. Meigs, Voa Seybold & Co., No. 4 Broad st., New York.

Friday Evening.

LOANS. INTEREST PAYABLE IN GOLD.	AUTHORIZING ACTS.	AMOUNT OUTSTANDING.	RATE.	PRIN. PAY.	INTEREST.	WHEN PAYABLE.		OFF. PER CENT.	ASKED PER CENT.
Registered Bonds	28 January, 1847	$9.415.250	6	1867	.....	Jan.	July.	132	135
Coupon "								.....	.....
Registered Bonds	31 March, 1848	8.908.342	6	1868	.....	Jan.	July.	.....	130
Coupon "								104	.....
Registered Bonds	22 June, 1860	7.022.000	5	1874	.....	Jan.	July	104	.....
Coupon "								.....	100
Registered Bonds	14 June, 1858	20.000.000	5	1874	.....	Jan.	July.	100¼	101
Coupon "								.....	.....
Bonds, March 3, 1863		.....	6	1881	.....			.....	.....
Oregon War Debt		1.016.000	6	1881	.....	Jan.	July.	104	.....
Registered Bonds	8 Feb. & 17 July & Aug., 1861	282.295.500	6	1881	.....	Jan.	July.	111¼	111¾
Coupon "								111⅞	112
Registered "	25 February, 1862 (5-20's)	514.780.500	6	1882	.....	May	Nov.	108½	108¾
Coupon "								110⅜	110½
Registered "	(5-20's) new issue	100.000.000	6	1884	.....	May	Nov.	108	.....
Coupon "								109	109¼
Bonds, March 3, 1865	(5-20s)	80,734,500		1885	.....			.....	.....
Registered "	(10-40's)	171.219.100	5	1904	.....	Mar.	Sept.	98¼	.....
Coupon "								102¼	102⅞
Total April 1		.....							

LOANS. INTEREST PAYABLE IN LAWFUL MONEY.	AUTHORIZING ACTS.	RATE.	AMOUNT OUTSTANDING.	PRINCIPAL PAYABLE.	INTEREST.	WHEN PAYABLE.		OFF.	ASKED.
Bonds, Cent'l P. R. R. Co., July 2, 1864		6	$2.362.000 00	1895	.....	Jan.	July	.....	.....
Bonds, Union P. R. R. Co., July 2, 1864		6	2,130.000 00	1895	.....	.....	.....	.....	.....
Temporary Loan		4		10 days' notice	.....	.....	.....	.....	.....
Temporary Loan		5	124,561.486 00	10 days' notice	.....	.....	.....	.....	.....
Temporary Loan		3		10 days' notice	.....	.....	.....	.....	.....
Certificates of Indebtedness, March 1, 1862		6	43.025.000 00	1 yr from date	.....	1 yr. fr. date		.....	.....
1 and 2 Years' Notes, March 3, 1863		5	.....	.....	.....	1 yr. fr. date		.....	.....
3 Years' Compound Interest Notes	March 3, 1863 / June 20, 1864	6	162.012.140 00	3 yrs from date	.....	At maturity		.....	.....
3 Years' Treasury Notes	June 30, 1864 / March 3, 1865	7.3	.....	3 yrs from date	.....	Aug.	Feb.	107	107⅛
3 Years' Treasury Notes, March 3, 1865		7.3	812.221.600 00	3 yrs from date	.....	June	Dec.	106⅝	106¾
3 Years' Treasury Notes, March 3, 1865		7.3	.....	3 yrs from date	.....	July	Jan.	106⅝	106¾
Aggregate of Debt Bearing Lawful Money Interest. April 1				Total Interest					

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office :

56,871.—PUMP.—M. J. Atthouse, Waupun, Wis. :

I claim the inserting of a glass, stone, or metallic tube, or lining, into the barrel of a wooden pump, and firmly holding it there by means of rubber, or other elastic rings, in the manner and for the purpose heretofore set forth.

56,898.—METHOD OF OPERATING STEAM ENGINES.—Samuel G. Cabell, Quincy, Ill. :

First, I claim providing for the use of a portion of the spent steam in the cylinder, to fill the vacuum on the opposite side of the piston, previously to the admission of fresh steam for its return motion, by means substantially as herein specified.

Second, The arrangement of a valve or valves in the piston of a steam engine, substantially as and for the purpose set forth.

56,899.—PISTON FOR STEAM ENGINE.—S. G. Cabell, Quincy, Ill. :

I claim the combination of the flexible disks, D, with a steam or other piston, operating substantially as herein specified.

56,915.—SAFETY CAGE FOR MINES.—John Evans, Virginia City, Nevada :

I claim the employment or use of the lever, A, spring bar, B, with the friction roller, c, and guide pin, d (or their equivalents), when arranged substantially as described and for the purpose set forth.

56,946.—STEAM-ENGINE VALVE.—Andrew Jamison, Taylorstown, Pa. :

I claim the saddle-shaped valve, C, and its seats, B and D, made of corresponding shape thereto, when arranged together, substantially in the manner and so as to operate as and for the purposes specified.

56,961.—GRAB TOOL FOR OIL WELLS.—J. H. Luther, Petroleum Center, Pa. :

I claim the grab herein described, the same consisting of the hollow cylinder or tube, A, provided with grab jaws, B, connected to a common loose collar, D, and spiral spring, or its equivalent, when all constructed and connected together, substantially as described and for the purpose specified.

56,966.—BELT COUPLING.—James Mattix, Kokomo, Ind. :

I claim the hereinabove described device for adjusting the length of belt couplings without removing the clasps, B, B, by the insertion of a three-sided link, d', the ends of which are riveted by a yoke, E, attached to the screws, F, substantially in the manner set forth.

56,989.—OBTAINING OIL FROM WELLS.—L. Phleger, Philadelphia, Pa., and George G. Lobdell, Wilmington, Del. Ante-dated August 2, 1866 :

We claim inducing the flow of oil from a well by melting the paraffin by the application of heat from hot water, conveyed in a circuit through a pipe, substantially as shown and described.

57,011.—DRILLING MACHINE.—R. A. Thomas, Damascus, Cal. :

I claim, First, The combination in a machine for drilling rock in drifts and tunnels of the stanchion post, B, the bar, C, that supports the feed screw and drill, and the adjustable box, H, constructed and arranged substantially as described.

Second, I also claim the square box, I, fitted to the stocks of the drill and feed screw, substantially as described, so that they can be connected at pleasure.

57,002.—COAL SCREEN.—J. B. Smith, Dunmore, Pa. :

I claim combining with a series of graduated, meshed screws, a series of smooth conveyers, so that as soon as the coal is separated, it shall be carried out of the machine without any further unnecessary agitation, which only produces waste, substantially as herein described.

57,035.—STEAM JET-PUMP.—Charles Barnes (assignor to Warden, Rensford & Co.), Cincinnati, Ohio :

I claim a steam-jet pump constructed substantially as described, with jet perforations, d, and a direct water passage, A B C, as set forth, and for the purpose specified.

Special Scientific Brevities.

☞ Many years ago Faraday observed that light was transmitted through thin sheets of platinum, palladium and rodium, gold, silver, copper, lead, tin, iron and aluminium. Recently Tasicke sought to determine the secret velocity with which light travels through metals, and found that it travels faster through gold and silver than through a vacuum ; but none of these facts was so surprising as those afterwards shown by Deville, that both platinum and thick wrought iron tubes are often carried to a high temperature easily permeable to gases. So remarkable was the permeability of iron at a high temperature, that an iron tube filled with hydrogen gas before the experiment, was found at the end of two hours to hold only a trace of it.

☞ It is a fact that Lowmoor and Bowling cast-iron possess by no means high co-efficients of ultimate strength ; thus the ultimate tensile strength of Lowmoor cast iron, according to Mr. Mallet, is only 5.667 tons, and of Bowling iron 6.032 tons per square inch, while, as is well known, that of many other makers ranges from seven up to ten tons per inch, while the strength of various mixtures is still greater.

☞ Daniel's battery reduces iron from a solution of its protochlorate as a lead-grey deposit, which is very spongy if the evolution of hydrogen is spongy ; it is then a rather light powder, very soft, extremely ductile, so that it may be converted into plate between the finger-nails.

☞ MM. Francqui and Vyvere prepare the Bismuth test for glucose as follows : Nitrate of bismuth is first precipitated by a considerable excess of potash ; the mixture is then moderately heated, and tartaric acid added until the precipitate is dissolved, when the re-agent is ready. A few drops of this to be boiled with diabetic urine gives a black deposit of metallic bismuth.

☞ Many of the coal-burning engines of the South-eastern railway in England, are now worked with coke ; there is little difference in cost, and freedom from smoke is deemed of more importance than the saving in cost.

☞ Some ova or eggs are so small as to be wholly indistinguishable by the eye, but M. Geoffry de St. Hilaire, in 1854, exhibited to the French Academy some eggs of a bird which formerly lived in Madagascar. The largest of these was over one foot long, and nearly as wide. This egg would hold 17¾ pints.

☞ Mr. Youatt, a famous veterinary surgeon, who has been bitten eight or ten times by rabid animals, relates that chrystals of nitrate of silver *rubbed* into the wound would positively prevent hydrophobia in the bitten. True or not it is easily tried, and is not dangerous.

☞ F. Junemann recommends a cement which hardens rapidly, and resists the action of fire and water. Two parts of sifted iron filings free from rust and one part of pulverized glue are stirred into a dough in sharp vinegar, until they are well mixed and are of a suitable consistency. It must be applied as soon as made, as it hardens rapidly, and cannot be used a second time. It is recommended as a lute for stills, air-pumps and steam connections.

☞ It has recently been found that some larvæ of the common meal worm had done great damage in an extensive cellar by eating through the corks of bottles containing port wine. They had also attacked the corks of the sherry bottles. It was also found that the larvæ of an allied insect had thus pulverized and destroyed a considerable part of an entire invoice of fine corks.

☞ M. Courdeboy introduces an electro-magnet into the circuit of a galvanic pile, and breaking the circuit, places the ends of the two conducting wires, separated one from the other, in a box containing metallic filings. If now one of the conducting wires be slowly raised, a small chain, consisting of the cohering fragments, will be drawn out, every particle in the box adhering.

☞ Ozone may be very readily generated from permanganate of potassa. Mix two parts, by weight, of permanganate of potassa with three parts, by weight, of sulphuric acid. A mixture of one part of the potash salt with one of the acid is so powerful as to propuce combustion if brought into contact with essential oils. The ozone is eliminated very rapidly,

NEW YORK STOCK MARKET.

MINING.	Aug. 11. BID.	ASKED.	Aug. 13. BID.	ASKED.	Aug. 14. BID.	ASKED.	Aug. 15. BID.	ASKED.	Aug. 16. BID.	ASKED.	Aug. 17. BID.	ASKED.
Ada Elmore		3 50	3 10	3 50				3 50		3 50		
Altona						2 50				2 00		2 50
American Flag	1 25	1 50	1 30	1 65	1 40	1 60	1 45	1 60	1 40	1 55	1 50	1 60
Atlantic & Pacific	1 75	2 50	2 00	2 50	1 75	1 90	1 75	1 90	2 00	1 95	2 25	
Bates & Baxter Gold	60	1 70		2 00		1 75		1 75	1 80	2 00	1 65	2 50
Benton Gold	1 35	1 40	1 30	1 45	1 30	1 45	1 30	1 40	1 30	1 40	1 35	1 40
Bobtail Gold		3 00		3 00		3 00		3 00		3 0		3 00
Consolidated Gregory	17 00	17 25	18 80	18 90	19 25	19 70	17 95	18 00	17 65	18 10	16 50	16 75
Corydon			2 00	2 50		3 00		3 60	2 50	2 90	2 25	3 00
Downieville Gold	1 11	1 12	1 12	1 14	1 15	1 16	1 16	1 17	1 19	1 20	1 25	1 26
Eagle Gold						2 50						
Gold Hill												
Grasss Valley Gold												
Gunnell Gold	1 06	1 10	1 07	1 08	1 06	1 09	1 05	1 08	1 05	1 10	1 02	1 04
Gunnell Central												
Holman	35	36	35	36	31	38	35	38	36	38	35	38
Hope Gold		3 00		3 25		2 75		2 75		2 60		2 40
Keystone Silver		10		10	6	9		10	6	9	6	9
Kipp & Buell Gold	1 60	1 80	1 55	1 75	1 65	1 75	1 65	1 75			1 90	2 20
Liberty Gold		25				15		15		25		20
Liebig Gold			40	60	40		40		50		45	
Manhattan Gold												
New York	1 26	1 30	1 25	1 40	1 33	1 42	1 30	1 40	1 25	1 50	1 22	1 30
Oak Hill Gold	2 75	3 00										
Quartz Hill	4 40	4 60	4 25	4 55	4 40	4 60	4 45	4 50	4 50	4 55	4 40	4 55
Rocky Mountain Gold		3 00		3 00		3 00	2 70	2 90	2 00	2 75	2 70	2 75
Silver Eagle												
Smith & Parmelee Gold	8 75	9 50	9 00	9 30	9 00	9 20	9 00	9 20	9 00	9 25	9 10	9 45
Texas Gold			5		5		7	10	10	14	5	
Virginia City												
Waddingham Gold												
Union Gold	2 00		1 95	3 00	2 00	3 00	2 00	3 00	2 00			
West Fellows Gold												
Caledonia Copper	4 50											
Hancock Copper	32 00				30 00							
Canada Copper	60	90		90	70	90		1 00		80		1 00
Central Copper	30 00											
Evergreen Bluff Copper		10 00										10 00
French Creek Copper	60	1 00				1 25						
Hilton Copper						1 75						
Aztec Copper												
Montana Gold				30	25	30		30				30
Knowlton Copper												
Mendota Copper												
Minnesota Copper												
Norwich Copper												
Ogima Copper												
Deubo Lead												
Phœnix Lead & Mining Co		1 75		1 75		1 60		1 60		1 55		1 55
Redwood Lead		2 00				2 00						
Superior Copper												
Wallkill Lead	1 17	1 20	1 15	1 20	1 15	1 20	1 15	1 19	1 15	1 20	1 21	1 25
Columbian Coal		1 50										
Schuylkill Coal												
Flint Steel River Copper												
Copake Iron						50						
Foster Iron												
Annular Drill												
Perry & Peop. S. Min. Co.												
Rockland Copper							6 00					
Isle Royal Copper												
British Amer. Coal. Frei.												
Rutland Marble	15 00					20 00						
Huron Copper										13 00		

OIL STOCKS.

Bennehoff Run	6 70	6 80	6 80	7 10	6 90	7 05	6 80	7 00	6 75	6 90	6 35	6 45
Buchanan Farm	24	28	25	30	20	30	25		26	35	29	35
Central	2 30	2 40	2 30	2 45	2 50	2 40	2 35	2 45	2 30	2 45	2 30	2 45
Excelsior	34	38	35	38	33	38	33	37	30	35	33	35
First National	4		3	8	4	8	3	9	9	12	8	11
Ivanhoe					2 60							
N. Y. & Alleghany	4 80	5 50	4 60	5 00	4 50	5 00	4 70	5 00	4 75	5 00	4 50	5 00
Northern Light												
Oil Creek of N. Y.	25	45	28		30		30	35	26	33	30	40
Pit Hole Creek	2 05	2 20	2 05	2 15	1 90	2 05	1 90	2 15	1 65	2 00	1 60	2 00
Rynd Farms	20	30	20	30	20	25	20		20	28	20	28
Shade River	23	30	23	35	20	30		30		27		30
United States	7 60	7 75	7 50	7 65	7 40	7 90	8 00	8 10	7 80	7 90	7 80	8 00
Palmer Petroleum												
Union												
Empire and Pit Hole												
Venango & Pit Hole												
Allen Wright												
Bergen Oil & Coal												
Bennehoff & Pit Hole												
Equitable												
Forest Co. Petroleum Co.												
Gt. Western Consolidated												
Guild Farm												
Heydrick Bros												
Homowack												
Lilly Run												
Oak Shade Petroleum												
Penn. Oil Creek												
President												

FREE LIST.

Bennehoff Run Oil			2 50	3 00	2 60	2 75	2 75	3 00	2 80	3 00	2 50	2 75
Brevoort	1 25		1 25	1 80		2 00	1 25		1 25		1 25	
Bliven						1 00		1 00				1 00
Brooklyn	25		25		35	1 00		60		1 00	40	75
Bradley		5		5	1	5						4
Bemis Heights	4 25						3 00		3 00			
Cherry Run Petroleum Co												
Cherry Run Special		40		30		25		30		30	10	30
Clinton Oil	1 50	1 60	1 50	1 60	1 35	2 00	1 30	2 00	1 35	2 00	1 35	1 90
Consolidated (New York)												
Empire City Pet'm Co						30		30				
Eclectic Oil		2 00				2 00						2 00
Enniskillen												
Germania			5	7	5	10	5			9	5	8
Hamilton McClintock	90		90	1 00	1 00	1 05	80	85	85	90	70	85
Heydrick						25	10				15	
High Gate			5	15		15		15		15		15
Inexhaustible												
Liberty						64		20			1	10
Mt. Vernon					10	25	10	25				
Manhattan												
National	2 00		1 00				2 00	4 00	2 00	4 00	1 50	3 50
New York & Newark				5				10		8	5	10
New York, Phil. & Balt						7		10	8	10	8	10
Second National	5	40			5							
Oceanic			7	9		10	6		7	10	6	12
Rathbone Oil Tract Co											6 00	8 00
Pit Hole Farms						50		50				50
Pet. Consolidation							3					
Union			2 50		2 50				2 90		2 75	
United Petroleum Farms		24		26				25		25		22
Titus Estate												
Webster		25			10	19	6	15	10	24		

BOSTON STOCK MARKET.

Reported for the Journal of Mining by Lombard & Co., 99 State Street, Boston.

COAL.

Companies.	Aug. 10. BID.	ASKED.	Aug. 11 BID.	ASKED.	Aug. 13. BID.	ASKED.	Aug. 14. BID.	ASKED.	Aug. 15. BID.	ASKED.	Aug. 16. BID.	ASKED.
Belmont	2 50	2 75	2 40	2 75	2 00	2 75	2 50	2 75	2 00	2 75	2 00	2 75
Collins		80 00		80 00		80 00		80 00		80 00		80 00
Cape Breton	2 75	3 00	2 75	3 00	2 75	3 00	2 75	3 00	2 75	3 00	2 75	3 00
Eagle Hill Mutual	50	75	50	75	50	75	50	75	50	75	50	75
Franklin		1 00		1 00		1 00		1 00		1 00		1 00
Gilberton	30 00	31 00	30 00	31 00	30 00	31 00	30 00	31 00	30 00	31 00	30 00	31 00
Glenville	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50
Harleigh	55 00	60 00	55 00	60 00	55 00	60 00	57 00	60 00	57 00	60 00	57 00	60 00
Lackawana	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00
Lorberry												
Locust Dale	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00
Mammoth Vein	7 00	8 00	7 00	8 00	7 00	8 00	7 00	8 00	6 50	7 50	6 50	7 50
Mount Pleasant	28 50	30 00	28 50	30 00	28 50	30 00	28 50	30 00	28 50	30 00	28 50	30 00
New England	25 00	30 00	25 00	30 00	25 00	30 00	25 00	30 00	25 00	30 00	25 00	30 00
Short Mountain	24 00	25 00	24 00	25 00	23 00	24 00	23 50	24 00	20 00	25 50	22 50	25 00
Summit Branch	13 00	13 50	13 00	13 50	13 00	13 50	13 00	13 50	13 00	13 50	13 00	13 50

MINING.

Albany and Boston	6 25	12 00		7 50		8 00	7 00		7 00			8 00
Bay State....asst. pd	13 87	14 00	13 50	14 00	14 12	14 25	14 00	14 50		14 00	13 50	14 00
Boston		1 37	1 12		1 00		1 00		1 00	1 25	1 00	1 37
Canada	75	1 00	90	1 00	75	90		75	75		75	90
Concord	3 25	4 00	3 25	3 50	3 37	3 12	3 25	3 50		3 50	3 25	3 50
Copper Falls		49 00	48 25	48 75	47 50	48 00	47 00	49 00	44 75	46 00	43 75	44 75
Franklin		58 50		57 75	55 75	60 00	59 50	59 75		59 00	61 00	
Hancock	30 00	31 00	31 25	31 37	30 50	31 00	30 50	30 75	30 00	31 00	28 75	
Humboldt	5 12	5 25	4 87	5 12	4 87	5 12	4 62	5 00	4 25	5 00	4 62	5 00
Huron	46 00	47 00		47 00		46 00	44 00	45 75		46 00	44 00	45 00
Isle Royal			11 00	12 00	12 50	11 00	13 00		13 00			13 00
Mesnard	2 62	2 75	2 87	3 00	3 00	3 12	2 87		2 50	3 50	2 37	3 25
Minnesota	9 50		9 25	9 50	9 25	9 50		9 75	9 37	10 00	9 25	9 50
National		18 00		18 00		18 00		18 00		18 00	16 00	18 00
Petherick		7 50	6 75	7 25	7 00	7 50	6 87	7 25	6 12	6 25	6 50	6 87
Pewabic	38 50	40 00	38 00	39 00	39 25	38 50	38 75	39 00	37 25	37 50	38 00	
Phœnix	10 00		10 25	12 00	10 25	12 00	10 25	12 00	10 25	12 00		12 00
Pittsburg		50 00	47 00	48 00	45 00	48 00		47 00		47 00		47 00
Pontiac	1 37	1 50	1 25		1 25		1 37	1 50		1 50		1 50
Quincy		50 00		49 00	48 75	49 00	48 75		47 50	48 50	47 25	47 50
Rockland		8 00	7 75	8 00	8 25	8 75	8 25	8 87	8 25	8 50	8 25	8 50
South Side	1 75	2 25	1 50	2 50	1 50	2 50	2 00		1 50	2 00	1 75	2 00
Star	2 00	2 50		2 25		2 25	1 75	2 50	1 75	2 25		
Superior	3 25	4 00	3 62	4 00	3 50	3 75	3 75	4 00	3 50	4 00	3 50	4 00
Toltec			1 37		1 37		1 25					
Winthrop			1 75	2 00	1 75	2 00	1 50	2 00	1 62		1 50	2 00
Consolidated Gregory Gold	15 50	15 65	17 60	17 20	18 80	19 00	19 25	19 50	17 95	18 20	17 95	18 20
Quartz Hill Gold	4 50	4 40	4 35	4 40	4 30	4 40	4 50	4 50	4 60	4 50	4 60	4 60
Smith & Parmelee Gold	9 05	9 15	8 95	9 00	9 00	9 10	9 00	9 10	9 00	9 15	9 00	9 15

PETROLEUM.

Beebe Farm	4 00		4 00		4 00		4 00		4 00		4 00	
Boston and Kentucky		20		20		20		20		20		20
Boston Oil Creek Land Co.	15	50	15	50	15	50	15	50	15	50	15	50
Boston Petroleum Oil Co	50		50		50		50		50		50	
Botolph Oil Well Co	1 00	1 50	1 00	1 50	1 00	1 50	1 00	1 50	1 00	1 50	1 00	1 50
Crescent Petroleum Co		1 00		1 00	50	90		50	45	75	45	75
Everett Oil Co	6	10	6	10	5	8	5	8	5	8	5	8
" " (Pref. Stock)	40	65	40	65	35	55	35	55	35	55	35	50
Farrar	4 00	6 00	4 00	6 00	4 00	6 00	4 00	6 00	4 00	6 00	4 00	6 00
Fuller Farm	10	16	10	16	10	16	10	16	8	12	8	12
Great Basin	5	10	5	10	5	10	5	10	5	10	5	10
Indian Spring	10	25	10	25	10	25	10	25	10	25	10	25
Mass. and Oil Creek	1 05	1 10	1 00	1 10	1 00	1 10	90	1 00	90	1 00	80	90
New England	10	15	10	15	10	15	10	15	10	15	10	15
New York and Boston		50		30		30		30		30		30
Pepper Petroleum	2 75	3 00	2 75	2 90	2 80	2 90	2 80	2 90	2 80	2 90	2 80	2 90
Pittsburgh and Boston	12	15	12	15	12	15	12	15	12	15	12	15
Tremont	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50
Suffolk and Oil Creek		10		10		10		10		10		10
Winthrop	2	15	2	15	2	15	2	15	2	15	2	15
Independ. of U. S. & C.W.												

New York Companies.

Bennehoff Run	6 55	6 60	6 70	6 80	6 80	6 90	6 90	7 00	6 80	6 90	6 75	6 85
Bergen Oil and Coal												
Bradley												
Buchanan Farm		22		20	25	24	28	25	30	20	30	25
Central	2 25	2 30	2 30	2 30	2 30	2 30	2 45	2 30	2 40	2 40	2 50	2 30
Cherry Run Special	10	40	10	40	20	40	20	50				
Consolidated												
Empire City												
Empire and Pit Hole												
Excelsior	33	35	33	35	38	45	33	40	33	38	35	37
Northern Light		2 00		2 00		2 00		2 00				
Oceanic												
Oil Creek	35	45	35	45	30	45	30	45	30	45	30	45
Palmer Petroleum												
President												
Pit Hole Creek	2 10	2 20	2 05	2 20	2 05	2 20	1 90	2 00	1 90	2 00	1 65	1 75
Rynd Farm	20	30	20	30	20	30	20	30				
Union												
Webster												
Stewart's Run	20	25	20	25	18	20	18	20	20	22	20	22
United States	7 80	9 95	7 50	9 60	7 50	9 60	7 40	7 50	8 00	8 15	7 80	7 90

PRICES OF ASSAYING IMPLEMENTS.*

[CORRECTED WEEKLY.]

Smelting Furnaces	$35 00@	40 00
Cupelling "	35 00@	40 00
Scales	10 00@	30 00
Assay Balances and Weights	100 00@	200 00
Plumbago Crucibles	25@	1 50
Paris "	15@	1 25
Porcelain Evaporating Dishes	25@	5 00
Fire Tongs	75@	3 50
Hammers	1 00@	2 50
Funnels	15@	1 00
Litmus Paper, quire	1 00@	1 25
Ingot Moulds	1 25@	3 00
Flasks, Bohemian Glass	15@	1 00
Sand Baths, Iron	25@	1 00
Pliers	50@	2 00
Mortar and Pestle, Iron, Agath, etc	50@	20 00
Lamps, Gas and Alcohol	75@	5 00
Blowpipes	50@	3 00
Hydro-Oxygen Blowpipes	25 00@	125 00
Pincers, or Cutting Plyers	75@	1 50
Glass Tubes, German, etc., per lb	75@	1 50
Muffler	50@	1 50
Anvils	1 00@	2 00
Cupel Moulds	3 50@	5 00
Cupels, per doz	50@	3 50
Bone Ash, per lb	25@	50
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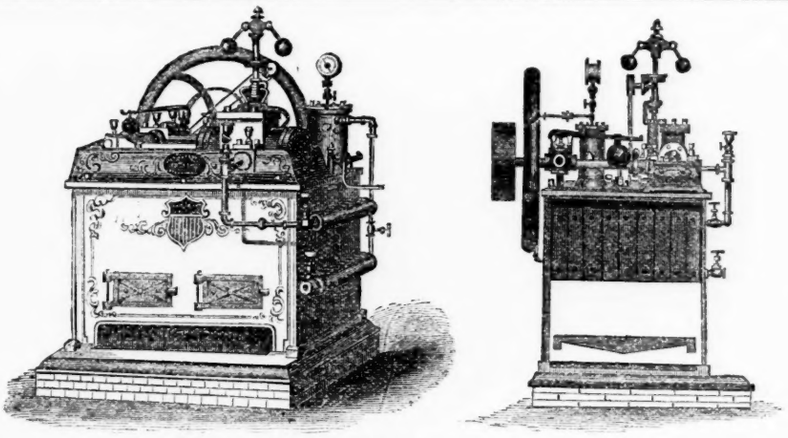

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SPECIAL NOTICES.

☞ Attention of miners is especially directed to the advertisement in this issue of the Woodward Steam-Pump Manufactory.

☞ Millmen will find it to their advantage to read the advertisement, in another column, of Brayton's Safety Steam Generator and Engine.

All Sorts.

☞ The assay of the gold from the rich mine of gold and silver discovered recently in Ulster county, New York, in the Shawangunk mountain, which was made at the Philadelphia Mint, and certified to, proves the quartz as rich as that of Colorado.

☞ The Berlin journals contain the following curious paragraph: "A Hungarian girl, born at Oedenbourg, without hands, now twenty years of age, has been giving some concert representations in the Prussian capital. She performs with her mouth the functions of hands. She sews, embroiders, executes the most delicate work with pearls, even threads her needles and makes knots, all with the tongue, apparently without any difficulty, and certainly without the assistance of any one."

☞ When the angel of the Lord would look into thee as into a mirror, he then thy soul here as the source of the Nile, not as the chime of the drowned river.

☞ The following advertisement appeared in a New York country paper recently: "Manure. Wanted, stable manure. Any person having from five to fifty loads to dispose of, will please send word or drop it through the post-office."

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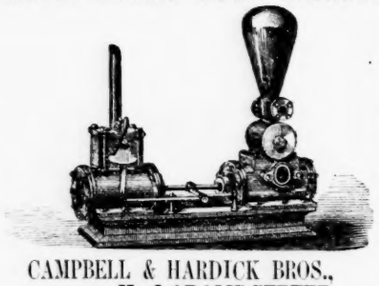

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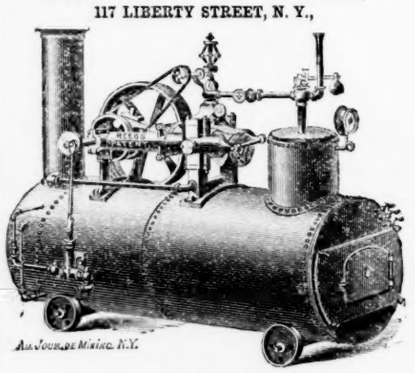

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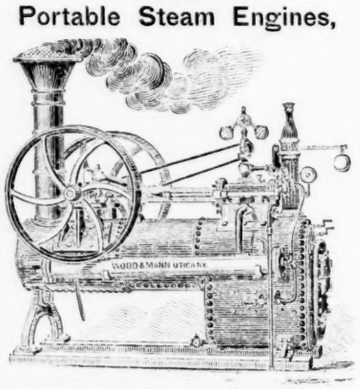

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ALBANY, July 13th, 1866.

Architects are informed that Plans and Designs for a NEW CAPITOL, at Albany, will be received by the Commissioners, at their office, until the FIFTEENTH DAY OF NOVEMBER next, at noon. A printed statement of instructions and details, and of the premiums offered, will be furnished at the office of the Commissioners, on application in person or by post.

HAMILTON HARRIS, Albany,
JOHN V. L. PRUYN, Albany,
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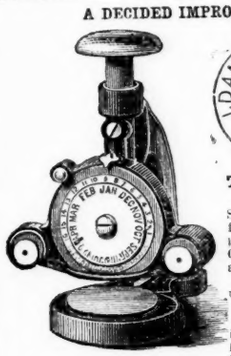

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CARD.—Professor H. DUSSAUCE, Chemist, lately from the laboratory of the French Government, left for Europe in the middle of May, where he will reside several months. He takes occasion to inform his numerous friends that he is ready to transact any business there in the chemical line, such as buying books and apparatus, machinery, presses, etc., selling chemical patents, etc. For further information address New Lebanon, N. Y. 5d

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The Machines now offered for sale are:

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These are the only machines that have done regular work in this Country, and are the most Simple, Compact and Economical. We invite the closest scrutiny. A full sized Mining Drill can be seen daily, drilling into a block of Rockport (Mass.) Granite, the hardest Granite known, at the Machine Shop of TERLING & KERR, No. 214 and 346 West 24th street, West of 10th avenue.

GARDNER'S PATENT ROCK DRILLING MACHINE FOR MINING PURPOSES.

DRIVEN BY STEAM OR COMPRESSED AIR. G. A. GARDNER, PATENTEE, NEW YORK.

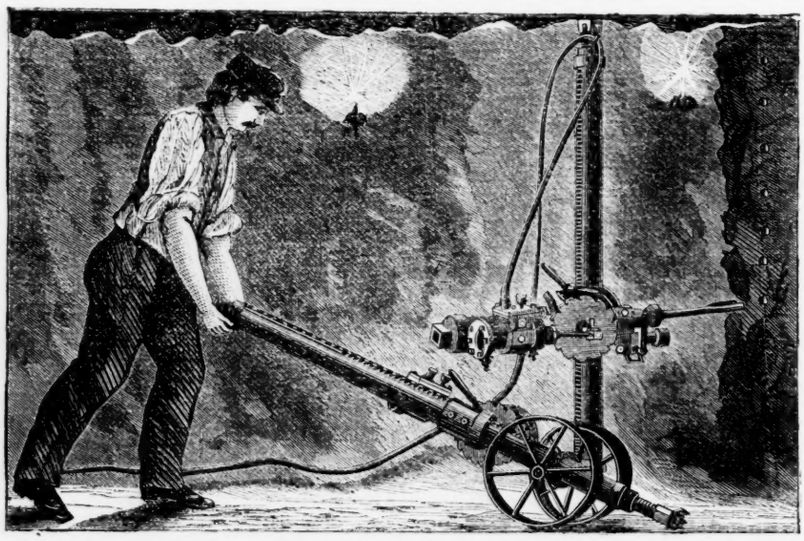
Certificate.

NEW YORK, March 25, 1866.
MR. G. A. GARDNER, Sec'y N. Y. Rock Drill Co.:

SIR—After witnessing the operation of your Rock Drilling Engines on several occasions, . . . I am satisfied that they are capable of boring much faster than by HAND in any kind of rock, and will operate with about equal efficiency at any angle in a vertical or horizontal plane; that they can work in confined spaces, such as shafts and drifts of mines, railroad tunnels, etc., etc.; that several drills can be used where only one could be operated by hand labor. These Machines may be driven by compressed air. It appears to me highly probable that the time required to open mines by machinery may not be more than one-fourth of that which is now required.

The advantages resulting from such a reduction of the time can hardly be over estimated.

Very respectfully,
GEO. D. EMERSON, Mine Engineer,
Late of Lake Superior, Mich.



Certificate.

No. 95 Liberty street,
NEW YORK, March 23, 1866.
MR. G. A. GARDNER, Secretary N. Y. Rock Drill Co.

DEAR SIR: Respecting the "Gardner Drill," I would say, we used it with perfect success on the Niagara Falls Canal. When we first worked it, we drilled to the average depth of 10 feet in the solid limestone, holes of the diameter of six inches, at the rate of eighteen inches deep, in twenty minutes.

We used it for several months on the regular work, and found it more economical and effective than any other drill we have ever used. The rock is the hardest kind of blue limestone, with occasional boulders of quartz imbedded in it. You are at liberty to refer parties to me who may desire more particulars.

S. M. ALLEN,
Late President of Niagara Falls Water Power Company

This cut represents a section of a mining tunnel, or *drift*, 6x4½ feet, with two Drilling Engines; one driven by *compressed air*, drilling horizontal holes, the other being moved by the Engineer to its position on a pair of wheels *temporarily* attached to its supporting column; three of these columns, with two machines on each, may be worked in a drift of this size, producing as much working effect as fully seventy-five men. A drift of this size through solid rock (granite for example) can be thus driven ten lineal feet every 24 hours.

These machines are very compact, measuring—independent of supporting column, etc.—30 inches in length by 12 inches breadth and depth, and weighing only 250 lbs. One man can move and adjust them to the work. The supporting column is held firmly in place by setting out the jack-screw, thus bracing it between the top and bottom of tunnel, or the sides of shaft, and the machines are raised and lowered by a gear working in the rack on side of column, while the attachments to the column form a *universal joint* and allow the machines to work *at any angle*. They are automatic; one engineer can attend to a gang of four or six, working on the same face. Six of them can be worked in a heading four and a half by six feet; and in a shaft six by twelve feet, eight of them can be worked at once. In a railroad, or other large tunnel, an increased number of machines can be operated, being supported and moved upon a carriage running on rails. The blow is struck by the drill being projected by the reactive force of an india rubber spring, against the rock, the drill being as free from the working machinery at the instant of striking, as an arrow shot from a bow; 300 blows per minute can be given with the utmost force the steel drill point can bear. The cross-head to which the drill is attached is drawn back; (thus compressing the spring) by a cam rotated directly by the piston rod of an oscillating cylinder, the drill point has an automatic turning motion, and the entire machine an automatic feed, *self-regulating*, according to the varying hardness of the rock; the machine working equally well with the same adjustment when drilling on flint, or on granite cutting two inches deep per minute, or on micaslate, sandstone, or other softer rocks, cutting four and six inches per minute. They drill equally well at any angle, and with them holes can be put in the most difficult places with great facility.

Machines for open cuts have been worked for several years on railroad and canal excavations, operated by four-horse engines drilling four, six and eight-inch diameter holes, and doing the work of fifty men. Rock-Drilling can be done with these machines for one-tenth the cost of hand labor, and in one-tenth the time. We are prepared to furnish machines with *gangs of drills* for splitting granite, marble, etc.; *channelling machines* for marble, etc., when blasting is to be avoided; also machines for cutting the "BEARING IN" in Bituminous Coal Mines: we also manufacture the GARDNER PATENT DRILL POINTS, especially desirable for sinking oil wells; making round holes, requiring no reaming, and cutting faster than any other point. 24f

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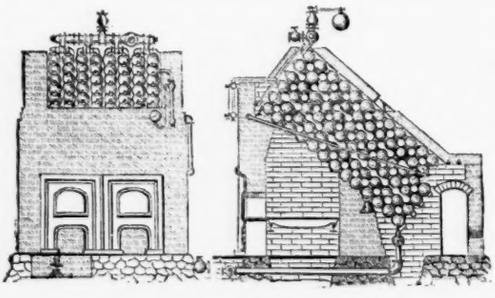

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Under pressure which might cause rupture in ordinary boilers, every joint in this becomes a safety valve. No other steam generator possesses this property of relief, under extreme pressure without injury to itself, and thus preventing disaster.

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